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THE BOTANICAL SOCIETY AND EXCHANGE CLUB OF THE BRITISH ISLES.

VOL. V. 1917-1919.

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THE BOTANICAL SOCIETY AND EXCHANGE CLUB OF THE BRITISH ISLES.

REPORT FOR 1917

(WITH BALANCE-SHEET FOR 1916)

BY THE

SECRETARY,

G. CLARIDGE DRUCE,

TREASURER AND EX-PRESIDENT OF THE ASHMOLEAN NATURAL
HISTORY SOCIETY OF OXFORDSHIRE.

VOL. V. PART I.

PUBLISHED BY
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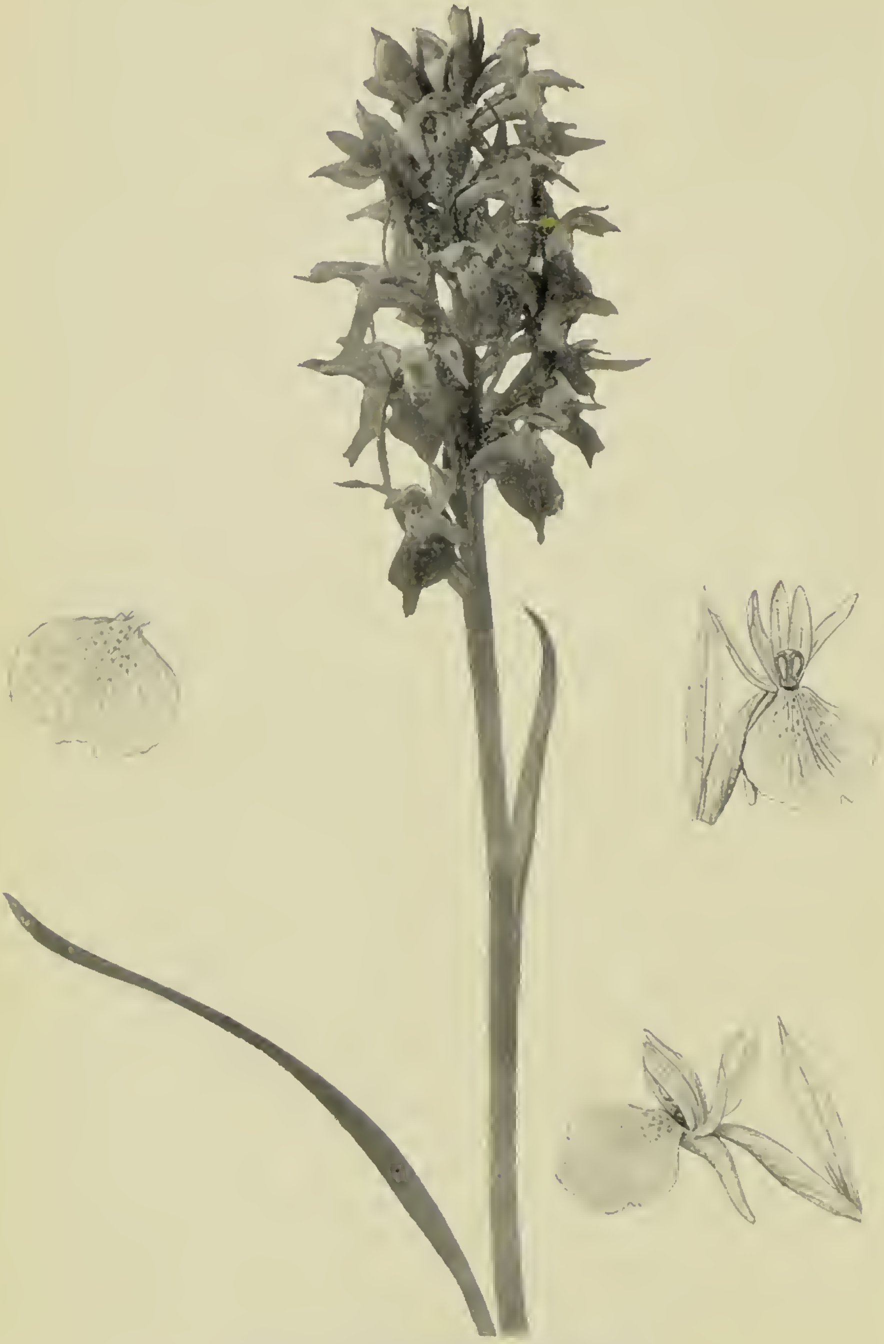

ORCHIS PRAETERMISSA DRUCE.

From a photograph of a plant from Abingdon, Berks., grown at Scampston Hall, Rillington, York, by W. H. St Quintin, Esq. The middle lobe of the labellum is longer than usual. The flowers are from drawings made by Miss R. M. Cardew.

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(VOL. V. PART I.).

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SECRETARY,

G. CLARIDGE DRUCE,

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The Distributor's Report on Plants sent in for 1917 will appear in due course.

PRINTED BY T. BUNCLE & CO., ARBROATH

September 1918.

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Todd, Miss.
Tracy, The Hon. Mrs Hanbury-.
Trail, Prof. J. W., F.R.S.
*Travis, W. G., B.Sc.
Trethewy, A. W., J.P.
Trollope, H. (1918).
Trow, Prof. A. H., D.Sc., F.L.S.
*Trower, Miss Alice.
Tuckwell, Rev. Canon W. (1918).
Turner, G. Cresswell, F.L.S.
Tulk, Miss May A. A.
Turrill, W. B., B.Sc.
Vachell, Miss.
Vaughan, Rev. Canon J.
Vaughan, E. (1918).
Vaughan, P. N. (dead).
*Vigurs, Major C. C., M.D.
Vincent, C. F., M.A.
Vines, Prof. S. H., D.Sc., F.R.S.
Vivian, Miss Clarice.
*Waddell, Rev. C. H.
*Wade, Rev. Arthur E.
Wales, The Nat. Museum of.
Walker, H., M.P.S.
Wallis-Wilson, Mrs.
Washington, The Dept. of Agriculture.
*Waterfall, Chas., F.L.S.
Webb, Arthur J.
Webster, Alfred, F.L.S.
Webster, Rev. Canon G. R. Bullock-.
Webster, George.
Weiss, Prof. F. E., F.R.S.
West, Prof. George S.
Wheelwright, Miss Edith, F.L.S. (1918).
*Wheldon, J. A., F.L.S.
Whymper, Lieut.
*White, J. W., F.L.S.
Whyte, J. S.
Williams, F. N., F.L.S.
Willmott, Miss E., F.L.S.
*Wilson, A., F.L.S.
Winchester College Library.
*Wolley-Dod, Major A. H.
Wotton, Miss Mabel E.
Wren, R. C., F.L.S.
Yapp, Prof. R. Y., M.A., F.L.S.

This list includes those joining for 1918.
Asterisks denote Exchange Club Members.

THE
BOTANICAL SOCIETY & EXCHANGE CLUB OF THE BRITISH ISLES.

THE REPORT OF THE TREASURER & SECRETARY,

G. CLARIDGE DRUCE, YARDLEY LODGE, OXFORD,

FOR 1917.

BALANCE SHEET FOR 1916.

By Subscriptions received,	£73	14	0	Balance from 1915, - -	£13	11	6
Sale of Reports, - -	5	9	9	Printing Reports, &c.,	61	12	10
Sale of Secy.'s Supplement,	0	9	0	Printing Secy.'s Supplement,	11	10	0
Donation to do., J. Platts,	1	1	0	Expenses of Distribution,	1	15	0
Donation, - - -	20	0	0	Postages, Carriage, Stationery, and Incidental Expenses,	11	13	3
				Balance in hand, - -	0	11	2
	£100	13	9		£100	13	9

Balance in Treasurer's hands, £0 11s 2d.
Life Members' Fund, invested in War Savings, £9.

Audited and found correct, January 9, 1918.—F. Twining.

All subscriptions should be paid to the above address on the first of January each year. Exchange Members pay 7s 6d, Ordinary Members 5s. Payment in advance for two or more years is preferred. The application for and acknowledgment of small sums necessarily entails trouble and expense. Members joining in 1918 pay 10s (Exchange Members 12s 6d), to cover entrance fee and the *Report* for 1917.

There are still a few complete sets of the *Reports* from 1879 to 1916, forming four volumes. These are available for members at £3 10s. Odd numbers may be had at a considerable reduction.

Despite the stress of war with the curtailment it has meant of time and means of locomotion and increased economic strain, the results of the past year from a botanical point of view are very encouraging. In no previous year have we had so many accessions to our ranks or such a large number of specimens sent for observation. The financial position of the Society has greatly benefitted by the increase of members and by kindly help. For the first time for many years there is no adverse balance.

We have to express our warm thanks to Mr D. Lumb and Mr W. H. Pearsall for acting as Distributors and for editing the *Report* for 1916. The plants were returned with most commendable promptitude. The *Report* gained much by the concise and valuable critical notices on the plants sent in and we are much indebted to those botanists—British and foreign—who supply them. Never has there appeared a *Report* freer from ambiguity or more helpful to the collector. No fewer than 5153 plants were sent by 30 contributors.

We are under great obligation to the Director and Staff of the Herbarium at Kew, to the Director and Staff of the National Herbarium at South Kensington and to Professor Vines, F.R.S., of Oxford, for facilities in consulting the specimens under their charge and for other kind assistance. To Dr Albert Thellung of Zurich we are specially indebted for naming many alien species. We heartily congratulate him on his recent marriage. and trust the slight souvenir sent him in the name of the members will be significant of the good-will we have for him. We have also to thank those critics and referees whose names appear in the *B.E.C. Report*, and also Messrs C. C. Lacaita, J. W. White, Professor Percival, Rev. E. S. Marshall, Mr E. D. Marquand—the latter has placed us under special obligation by translating the French papers on *Batrachian Ranunculi*, which we hope to reprint—Rev. F. Bennett, the Rev. H. J. Riddelsdell, and Mr R. H. Corstorphine for editorial assistance.

Thanks are also due to the donors to the Benevolent Fund for kindly help. They include Mrs Shipley, the Hon. N. C. Rothschild, Messrs C. Bailey, H. Graveson, and W. Sanderson.

We are also very grateful to Sir D. Prain for allowing us to publish M. Gay's paper on Channel Island Plants, which had been brought to my notice by Mr F. N. Williams, and to the Rev. S. A. M'Dowall, the President of the Winchester College Natural History Society for not only allowing us to republish the valuable notes on Orchids, but also for most kindly lending us the blocks of the beautiful drawings made by Miss Corfe, which give such a great additional value to the paper.

During the year we have lost seven members by death. Major Sanderson was killed in France, and through his death we lose a valued member and a skilled horticulturist. Sir Edward Evans, D.L., and Mr J. Platts were well-known figures in the world of pharmacy and valued colleagues. The former, a well-known political worker, had been President of the Pharmaceutical Conference; the latter, one of the writer's oldest friends, died suddenly in Oxford, as he was about to call on him. His sister, Mrs Shipley, has helped our Benevolent Fund by a donation, and she has given £1000 to establish a bed in his memory at the Royal Leicestershire Hospital. Mr S. Margerison of Calverley, Rev. C. W. Peck of Billingford Rectory, Rev. W. Butt of Oakwood, Chepstow, and Mr J. G. Geake of Guildford have also passed away. We have also to record the death of Mr P. N. Vaughan of Redland, Bristol, that distinguished philanthropist who was the life and soul of the Convalescent Home on Durdham Downs which he did so much to support. For the past twenty years it was the writer's privilege to meet our late member at the annual Christmas dinner to the inmates, and on one of these occasions he was asked to propose a vote of thanks to the donors, one of whom was Mr Vaughan, who had given a donation (not the first of its kind) of £5000. It may be remembered that *Lamium maculatum* (recorded in *English Botany*) was found by his mother, Mrs Vaughan, in 1813, at Bristol, close to where he lived at Redland Court.

Our new members for 1917 and 1918 include Lady Edina Ainsworth, Rev. F. S. Alston, Mr J. E. Arnett, Rev. E. Benwell, Mr E. B. Bishop, Miss Ada Cameron, The Charterhouse, Miss A. B. Cobbe, Miss Coles, Rev. E. C. Crutwell, Mr W. Davidson, Mr Docker-Drysdale, Sir Edward Evans, D.L.; Mr W. P. Evans, J.P.; Mr J. G. Everitt, Mr J. Ewing, LL.D.; Mr J. Meade Falkner, M.A.; Mr Reginald Farrer, Mr J. Maurice Franklin, the Earl of Gainsborough, Mr T. R. Gambier-Parry, Mr J. S. Gamble, F.R.S.; Mr C. E. Gardner, D.L., J.P.; Mr T. E. Goodyer, Mr C. B. Green, Mr J. E. Griffith, F.S.A.; Mr R. G. Gwatkin, Mr J. W. Heslop-Harrison, D.Sc.: Rev. J. Clare Hudson, Dr Hurry, Hon. Mrs Ingilby, Mr T. F. Jeyes, Mr R. Kennedy, Rev. C. Q. Knowles, Lady Joan Legge, Mr L. V. Lester-Garland, M.A.; Mr G. E. C. Maconchy, Miss I. H. Martin, Lieut. C. Marquand, Mr H. Messel, Mr H. W. Monckton, F.L.S., F.G.S.; Lord Moreton, Mr W. E. Nicholson, Sir

William Osler, Bart., F.R.S.; Oxford Public Library, Miss Powell, Mr H. Powell, Sir David Prain, F.R.S., President of the Linnean Society; Mr H. S. Redgrave, B.Sc.: Right Rev. Bishop Robertson, D.D.: Lady Victoria Russell, Mr J. Sanderson, J.P.: Miss P. Simons, Professor W. Somerville, Mr A. W. Southall, Mr E. Thurston, C.I.E.: Hon. S Tennant, Mr N. Temperley, Mr T. Trollope, Mr P. N. Vaughan, Mr R. Vaughan, Miss Clarice Vivian, Mr C. F. Vincent, M.A; National Museum of Wales, Mr J. A. Webb, Lieut. Whymper, Miss Willmott, Miss M. Wotton, Mr R. C. Wren, F.L.S.

We offer our sincere congratulations to the Raj Rana of Jhalawar on the high dignity of Maharajah recently conferred upon him for his distinguished service to the State.

Many of our members are serving at the front, in other active war service, or in matters appertaining to the war. They include, among others, Lieut. W. James, Lieut. P. M. Hall, Lieut. T. H. Leach, who had the honour of having the General in his Tank at the Cambrai attack at Gouzeaucourt, and who was the only one in the Tank who escaped being killed or wounded; Lieut. H. E. Porter, Lieut. A. R. Horwood, Lieut. C. Marquand, Lieut. Whymper, Mr W. B. Turrill, who received an injury in Macedonia and is now in England; Mr G. C. Brown, Mr R. H. Corstorphine, Colonel H. Halcro Johnston, Major Wolley-Dod, Major W. Harford, Major F. J. Smith, Mr T. Bates Blow, and Major C. C. Vigurs.

Contributions of books, specimens, &c., are welcomed for presentation in after days to the University of Louvain. Each should bear the donor's name.

Our honorary member, Mr J. Gilbert Baker, F.R.S., now in his 86th year, kindly sends the following letter on the commencement of the fifth volume and the sixtieth annual Report:—

3 Cumberland Road, Kew, November 14. 1917.

My dear Druce,—I am very pleased to hear "The Botanical Exchange Club" is expanding so wonderfully under your active and able management. When I began it in 1857 I had no idea of starting a new institution. I was a member of the old "Botanical Society of London," and a large contributor to its annual distributions, then managed by the Curator, Mr J. T. Syme, afterwards Boswell Syme. The Society decided that it could not bear the expense of a room in Central London and a paid curator, and soon ceased to exist. It was then expected that it would be soon reconstituted, and I undertook to carry on the distributions until the new Society got into working order, which never took place. In its early days the Club was largely helped by Mr H. C. Watson, who sent large and extensive contributions, and Dr Boswell Syme. In 1864, when my house and collections were entirely destroyed by fire, fortunately after the distributions for the year had been made, my old friend, Mr William Foggitt, kindly placed at our disposal his large stock of duplicates. I think you yourself were one of the very early members, together with T. R. Briggs, F. N. Webb, and G. E Hunt

With my very best wishes for the continued prosperity of the Club,

Yours faithfully,

J. G. Baker.

PLANT NOTES, ETC., FOR 1917.

(Mostly New Plants to the British Isles).

Following the usual procedure, the Secretary, Mr G. C. Druce, has prepared the Annual Report on the salient features of British Botany. This being his own compilation in no way assumes to express other than individual opinion, but all rights in its publication are reserved.

The Secretary is always glad to receive specimens which he will determine himself, or if necessary refer them to special authorities. Any of these which are new county records or undescribed forms will be published in the next *Report*. New county or other records should be accompanied by a specimen as a voucher, and with full particulars of its occurrence, *e.g.*, "No. 4. On the sand dunes, Yarmouth, Norfolk E., July 6, 1917." If a duplicate is retained with a similar number it saves the trouble of returning specimens. Return postage should always be enclosed with a direction label or a directed post card. The Secretary's services are always at the disposal of any member either for naming specimens, or, if possible, for supplying any special plants, books, or general information.

9. ANEMONE NEMOROSA L. The following note on a pascual form of the Wood Anemone may elicit information as to the occurrence of it in pastures elsewhere. In Oxfordshire it occurs in open fields in the woodland area bordering on Otmoor, but the presence of *Geum rivale*, *Serratula*, &c., suggests that the woodland has been cleared at no very distant date. In fact, the plants are degenerates of a damp oak-wood formation. "It grew near Pontypant station, and between it and Roman Bridge, Carnarvonshire, in open fields. Those appeared as if covered with daisies from the abundance of the flowers. It grew on alluvial soil and on drier fields at an altitude of 500—700 feet. It also occurred near Pant Glas as far as to Brynkir, in a country practically bare of trees, without woodland near. The soil there is drift, not alluvium. In one case it grew in a moist meadow near Pontypant. The plants differ from type *nemorosa* (1) in the rootstock being yellowish to brown, not black; (2) leaves more downy; (3) sepals definitely 2-whorled, outer 3, inner usually 4; (4) in the

more dwarfed stature, the plants being however quite vigorous. In the Brynkir locality the following variations in the perianth segments were noted :—P6 (3), P7 (3 and 4), P8 (3 and 5), P9 (4 and 5). The last was a handsome form. There was a considerable range of colour variation from pure white to pale lilac and deep purple-lilac on both surfaces. Roots of these plants continue their purple colouring in garden soil. The greater part of the lilac-purple flowered plants had 7 perianth segments." T. J. JENKINS.

126 (2). RADICULA NANA (Weddell) comb. nov. *Nasturtium nanum* Weddell in Act. Sc. Nat. Ser. iv., vol. v., i., 290, 1864. Alien, Bolivian Andes, Peru. Ettrick side, Selkirk, 1916, Miss I. M. HAYWARD. Teste A. THELLUNG.

135 (2). ARABIS AURICULATA Lam. Enc. i., 219. Alien, Europe, Orient. Several near Musselburgh, 83, J. FRASER in *Trans. Bot. Soc. Edin.* 405, 1915.

185 (2). SISYMBRIUM ERYSIMOIDES Desf. Fl. Atl. ii., 84, t. 158, 1798-1800, forma XEROPHILUM Fourn. Réchere. Sisym. Alien, Spain, Sardinia. St Philip's Marsh, Bristol, 1916, Miss COBBE and G. C DRUCE.

188 (2). S. VOLGENSE M. Bieb., ex Fourn. Thèse Crucif. 97. Alien, Russia. St Philip's Marsh, Bristol, 1916, G. C. DRUCE.

191 (3). For S. PINNATUM (Walt.) Greene in *Rep. B.E.C.* iii., 152, 1887 (not of Barnwell 1845) read S. MULTIFIDUM (Pursh) MacMillan, sub-sp. S. BRACHYPHYLLUM (Richardson) Thellung, forma EGLANDULOSUM Thell. in Hegi Ill Fl. Mitt. Eur. iv., 153, 1916. Alien, N. America. Par, Cornwall, 1909, G. C. DRUCE; Galashiels, Selkirk, 1916, Miss I. M. HAYWARD. Det. A. THELLUNG.

193 (4). S. MYRIOPHYLLUM (Willd. MS. Humboldt, Bonp. & Kunth ined.) DC. Syst. ii., 477, 1821. Alien, base of Cotopaxi, Quito. Ettrick side, Selkirk, 1916, Miss I. M. HAYWARD. Dr THELLUNG with some reservation thus identifies it with the rare South American species.

228 (2). ERUCA CAPPADOCICA Reuter Cat. Hort. Genev. 1857. Alien, Asia Minor. Portmadoc, Carnarvonshire, 1916, Miss COBBE. This differs from *sativa* in its yellow petals, glabrescent leaves which

are less deeply divided, having obtuser segments, larger seeds and longer siliquas.

232 (2). BURSA GRACILIS (Gren.) *Capsella gracilis* Grenier Fl. Mass. Adv. 17, &c. × *C. gracilis* Rouy & Foue. Fl. Fr. ii., 96, 1895. Focke Pflanzenmisch. 41. (?) *C. rubella* × *Bursa-Pastoris.* Sil. très petites (2½ mm. long) équilatérales ou plus larges que longues, à graines la plupart avortées, sépales rougâtres; pétales dépassant peu le calice. *Fl. Fr., l.c.* Sewage Works, Leeds, E. C. HORRELL. See *Rep. B.E.C.* 558, 1916. Det. A. THELLUNG.

247 (18). LEPIDIUM BIPINNATIFIDUM Desv. Journ. Botanique iii., 165, 1814. Alien, S. America. Ettrick side, Selkirk, 1916, Miss I. M. HAYWARD. Det. A. THELLUNG.

247 (19). L. CALYCINUM Godr. in Mem. Acad. Act. Montp. Medic. i., 416, 1853. Alien, S. America. Tweedside, near Galashiels, Selkirk, 1909, Miss I. M. HAYWARD. Det. A. THELLUNG.

247 (20). L. TEXANUM Buckley in Proc. Ac. Sc. Philad. 499, 1861 (1862). *L. virginicum* L., sub-sp. *texanum* Thellung Mon. 163. Alien, North and Central America, Azores. Lyndhurst, S. Hants., 1916, Miss M. COBBE. Swanage, J. Green, 1917. Det. A. THELLUNG.

247 (21). L. TRIFURCUM Sonder in Linnaea xxiii., 4, 1850. Alien, Modder river, South Africa. Tweedside, Galashiels, Roxburgh, 1916, Miss I. M. HAYWARD.

247 (22). L. PAPILLOSUM F. v. Mueller in Linnaea xxv., 370, 1852. Alien, Australia. Galashiels, Selkirk, 1916, Miss I. M. HAYWARD. This is the true plant of von Mueller. the previously recorded *papillosum* being *L. oxytrichum* Sprague.

253 (2). IBERIS PECTINATA Boiss. Diagn. ser. 1, i., 75. Alien, Spain. Dean Clough, Halifax, York, 1916, E. C. HORRELL. The specimen is in fruit, but it is almost certainly this species.

330 (2). GYPSOPHILA ELEGANS Bieb. Fl. Taur.-Cauc. i., 319. Alien, Asia Minor. Waste ground, Scarborough Mere, York, E. C. HORRELL.

356 (4). SILENE ANTIRRHINA L. Alien, N. America. Wrentham, Suffolk, 1917, A. R. HORWOOD. Det. A. THELLUNG.

435 (2). HYPERICUM DESETANGSII Lam., var. PUNCTATUM E. Bonnet. Lamberton, Devon, A. SHARLAND in *Rep. Bot. Devon*, 1916.

441 (3). MALOPE HISPIDA Boiss. Diagn. ser. 2, i., 100. Alien, N. Africa. Turnip field, Flasby, near York, September 1916, F. ASHWELL, ex E. C. HORRELL.

443 (2). LAVATERA TRILOBA L. Alien, Spain. Chicken run, Woodhall Spa, Lincoln, 1917, Rev. F. ALSTON.

470. LINUM CATHARTICUM L., forma DUNENSE. In the damp hollows on Braunton Burrows, N. Devon, August 1917, coll. C. P. HURST. A small compact plant, having very short stems and with the habit and appearance of *Sagina maritima*. Plantis 2.5 cm., ramosis, foliis ellipticis, 2—3 × 1.5 mm., internodiis brevioribus 3 mm., capsulis 2 mm. latis. The plant is strongly infected with *Malampsora Lini*. G. C. DRUCE.

486. GERANIUM PUSILLUM Burm. f., var. CONDENSATUM mihi. A very compact, densely branching plant, 18 cm. diameter, with very small leaves 20 × 10 mm., short internodes, carpophore 5—7 mm., occurred at The Haven, Muddiford, Hants., and was sent by Mr C. B. Green in 1917. It is very near to var. *humile* Cav. G. C. DRUCE.

490 (3). ERODIUM BRACHYCARPUM (Godr.) Thellung, comb. nov. *E. Botrys*, var. *brachycarpum* Godr. Fl. Juv., 16 in Mém. Acad. Montpell. sect. méd. i., 424, 1853; Fl. Juv., ed. ii., 72, 1854; Thell. Fl. Advent. Montpell. 351, 1912; Kunth in Engler's Fl. Reich. iv., 129; Geran. 585, 1912; Aschers. et Graebn. Syn. vii., 80, 1913. *E. Botrys*, f. 2 *montanum*, Brumhard Monogr. Uebers. Erod., 48, 1905 [nomen] et in Fedde Repert. ii., 18, 1906; Thell. *l.c.* 351, 1912; Aschers. et Graebn. *l.c.* 81, 1913. *E. Botrys* auct. Chil.; Gay Fl. Chil. i., 390, 1845; Reiche Fl. Chil. i., 288, 1896; auct. Am. bor. occ.: Gray et Watson Syn. Fl. N. Am. i., 362, 1897; Jepson Fl. West Middle Califor. 247, 1901 ["naturalised plant, scarcely known in California ten years ago, but . . . become common"]; Hanks & Small in N. Am. Fl. xxv., i., 22, 1907, ["depauperate forms"]; auct.

Belg. Halin ap. Troch in Bull. Soc. Roy. Bot. Belg. xxxiv., ii., 147, 1895; Höck in Beih. Bot. Centralbl. ix., 329, *quoad loc.* Belg.; Durand in De Wild. et Dur. Prodr. Fl. Belge iii., 13, 948, 1903—non [Cav.] Bertol. Differt ab *E.* "*Botrys*" quocum ab auctoribus confusum vel pro cujus forma perperam habitum est, non solum statura gracili, floribus minoribus (sepalis in flore 5 mm., sub fructu 9 mm. longis.), carpellorum rostro breviore (3—6 cm. tantum longo), sed praesertim carpellorum fovea (apicali) plica concentrica unica tantum (nec plicis binis) circumscripta et inde specifice diversum videtus. Habitat in Chile (teste Brumhard, *l.c.*); advent. et jus civitatis nactum in California (Hansen, No. 502, teste Brumhard; Le Roy Abrams, No. 3350!); introd. in Galliam (in portu Juvenali pr. Montpelium, ca. 1840, Touchy! see Godron et Thellung, *l.c.*); Belgium—ad ripam fl. Vesdre pr. Ensival, 1904, Halin!; Angliam—Edenbridge, Kent, 1917, coll. G. J. Talbot. A. Thellung. Meanwood, Yorks., E. C. Horrell.

499 (21). Monsonia biflora DC. Prod. i., 138. Alien, S. Africa. Meanwood, York, 1917, E. C. Horrell. Det. A. Thellung.

501. Tropaeolum majus L., var. atro-sanguineum Hook. Bot. Mag. t. 3375. Hortal. On waste ground, Iffley, Oxon. G. C. Druce.

509 (2). Oxalis floribunda Lehm. Ind. Sem. Hort. Handb. 17, 1826. Alien, Brazil. Falmouth Docks, Cornwall, 1917, Miss M. Cobbe. Det., with some slight doubt, A. Thellung.

542 (3). Ononis viscosa L. Alien, S. Europe. Elland, York, 1917, E. C. Horrell. Det. A. Thellung.

560 (3). Trigonella incisa Benth. Alien, India, Beluchistan, Persia, Turkestan. Spring Hollow, Stalybridge, 1914; Valley Road, Rochdale, S. Lancs., T. Collier. Det. A. Thellung.

564 (2). Medicago varia Martyn Fl. Rustica 387. (?) *M. Falcata* × *sativa.* Alien, Europe. St Philip's Marsh, Bristol, 1916, Miss Cobbe and G. C. Druce.

581. M. minima Desr., var. canescens Ser. in DC. Prod. ii., 178. Plant not glandular but canescent with whitish tomentum. Alien. On waste ground near Abingdon, Berks., probably from fellmonger's refuse, August 1917, G. C. Druce.

Var. VISCIDA Koch Syn. ii., 180, 1846. Stem and leaves glandular-pubescent. Alien. Galashiels, Selkirk, September 1917, Miss I. M. HAYWARD and G. C. DRUCE.

Var. ELONGATA Rochel Enum. Fl. Banat. 15. Plant pubescent, not glandular, with elongate stems and larger leaflets. Covering a diameter of a metre, Galafoot, Selkirk, September 1917, Miss I. M. HAYWARD and G. C. DRUCE.

582. M. LACINIATA Mill., var. INTEGRIFOLIA Godr. Leeds, 1916, E. C. HORRELL.

631 (2). TRIFOLIUM CERNUUM Brot. Phyt. Lusit. i., 150, t. 64, 1816. Alien, Spain and Portugal. On pebbles at the junction of the Gala and Tweed, Selkirk, August 1917, Miss I. M. HAYWARD. Det. A. THELLUNG.

641 (2). ANTHYLLIS RUBRA Gouan Herb. 173. *A. Vulneraria* L., var. *coccinea* L. *A. Dillenii* Schultes. Plants of this species from Aberfraw Common, and near Newborough, Anglesey (locus classicus), were brought to my garden where they flowered freely and produced seedlings. All show the flower-characters of the parent. Although the plants have increased in size, yet the leaflets retain their narrow shape, the plant is more slender, the hairs on the stem appressed, and the petals rosy pink with darker tips. Dillenius cultivated it in the Eltham garden of James Sherard and figured it in *Hort. Eltham*, t. 320, f. 413. It was first discovered by Dr Richardson (see Richardson *Corresp.* 259), and seems well worthy of specific rank. Having distinctly a Western distribution, it must not be confounded with a form having yellow flowers with red or crimson tips. G. C. DRUCE.

691. VICIA LUTEA L., var. CAERULEA Archangeli Fl. Ital. 201, 1882. Differs from the type in its bluish flowers and in having 9—10 pairs of leaflets. Evington, Leicester, 1916, ex A. R. HORWOOD; Ware, Herts., 1916, G. C. DRUCE.

696 (2). V. MACROCARPA Bert. Fl. Ital. vii., 511. In a cornfield off the Hallatrow Road, Chewton Mendip, Somerset. Identified at Kew. B. W. T. Wells in *Rep. Wells N. H. Soc.* 21, 1917.

698. V. ANGUSTIFOLIA Reichb., forma RACEMOSA Beck. Chobham Common, Surrey 1909, C. E. BRITTON. Teste A. THELLUNG.

705 (2). V. PUBESCENS Link Handb. i., 190, 1831. Alien, Reg. Medit., Lydia, Taurus, Caucasus, and Canaries. Galashiels, Selkirk, 1917, Miss I. M. HAYWARD. Det. A. THELLUNG.

707 (2). LENS NIGRICANS Gren. Fl. Lorr. ed. i., 1, 173. Alien, Reg. Medit. Bristol, 1917, Miss I. M. ROPER, in *lit.*

910. ALCHEMILLA ARGENTEA G. Don. Valley of the Dole, Clova, Forfar, v.-c. 90, September 25, 1917. Found when returning with Mrs Wedgwood and my wife from a visit higher up the valley in September 1917. We have frequently searched for Mr A. O. Black's locality given for this plant with so much precision but hitherto without success. The ravines on Craig Rennet are well marked on the high ground, and it would seem easy to follow Black's directions, but the streams flowing down these gullies make many channels in the lower ground which are continually changing owing to rock falls. The station is on lower ground than we had previously searched. The plants are in fair abundance, but so far as we could see are confined to a longish straggling patch which is easily discernible from a considerable distance. R. CORSTORPHINE.

Alchemilla argentea G. Don ex Trevelyan Veg. Faroe Islands, 10, 1837 (pro parte) emend. *A. conjuncta* Bab. in Ann. & Mag. Nat. Hist. x., 24, 1842 pro parte, et in Eng. Bot. Suppl. under t. 2983, 1864, pp.; Bab. Man. 89, 1851, pro parte. *A. alpina* var. b. (et *A. hybrida* Hort. in syn.) Hook. & Arnott Brit. Fl. 134, 1855. *A. alpina* var. *podophylla* Tausch in Flora 108, 1841. *A. alpina* var. *Godeti* Ducommun Taschenb. Schweiz. Bot. i., 227, 1869. *A. conjuncta* Matthews in *Journ. Bot.* 91, 1881 spec. collect. includes *A. conjuncta* em. Buser, *A. Hoppeana* Reichb. and *A. pallens* Buser. A sport of *A. alpina* Hook. f. Stud. Fl. 127, 1884. *A. alpina* sub-sp. *conjuncta* Rouy & Camus Fl. Fr. vi., 443. *A. alpina* × *vulgaris* and *super-alpina* Rostr. in Bot. Tids. xvi., 173. *Exsiccata*:—*A. argentea* Don in Herb. Borrer. Isle of Arran, Dr Tyacke in Herb. Chichester Mus. *A. conjuncta* Marret Fl. du Valais 247, a narrow leafletted form. Dorfl. Herb. Norm. 3616, 3617 forma *truncata*. Baenitz Herb. Eur. 8227, 8 Val d'Ardran, Jura Gall. Fig. E. B. Suppl. i., 2983. Gardiner's *Flora Forfarshire* 64, 1848. Watson *Cyb. Brit.* i., 363, iii., 423, and *Comp.* 469-70, 510. Syme *E.B.* iii., 139, t. 424. *Rep. B.E.C.* i., 48, 334; iii., 323. Baker *Flora Lake Dist.* 89. Hodgson *Fl. Cumb.* 107, 1898.

Druce *Brit. Pl. List* 23. *Notes from the Royal Botanic Garden, Edin. Biog. George Don*, Druce, 107, 1904. *Journ. Bot.* 308, 1872; 306, 1913. *Ann. Scot. Nat. Hist.* 120, 1906.

The rediscovery of this very rare plant by Mr R. H. Corstorphine is the chief botanical event of the year, and an opportunity may be taken of giving its history in Britain. It was discovered in the Clova district by George Don of Forfar prior to 1812. There are specimens at Kew in Borrer's and Dawson Turner's Herbariums the labels of which are in Don's own writing:—"*Alchemilla argentea* Nova Species. Habitat Clova mountains. It differs from *A. alpina* in the divisions of the leaves—being not divided to their base as in this species." There is no reference to it, however, in Don's writings, nor did he send it out in his *Fasciculi*; yet (as we shall see) his son David knew of this discovery and said that his father had found it in the Isle of Skye. It was first published as a British plant in an incidental reference by [Sir] Walter E. Trevelyan in his *Vegetation of the Faroe Islands* (*l.c.*), a small treatise published in Florence in 1837. The book being rare, the reference is given here in full:—

"In all the specimens of *Alchemilla alpina* in the Linnean and Smith's Herbaria the leaflets are divided to the base, but in the plant which is not in these collections they are divided only about half way and are also wider towards the point and serrated rather lower down. In Faroe where it grows in similar situations to *A. alpina* I frequently found it in abundance where that plant did not occur. I am informed by Mr D. Don that the same plant was gathered by his father in the Island of Skye, and that he considered it to be a good species, naming it *A. argentea*, under which name it is occasionally to be found in gardens, though it is often confounded with the true *alpina*, for which plant it is published in *Fl. Danica* t. 49." George Don visited Skye about 1798. Five years after the appearance of Trevelyan's notice, C. C. Babington published it as *A. conjuncta* in Ann. & Mag. Nat. Hist. x., 24, 1842, "Foliis radicalibus peltato-palmatis, 5—7 partitis, laciniis oblongis, obtusis, apice adpresso serratis subtus albo-sericeis et conjunctis, corymbis parvis lateralibus terminalibusque distantibus = *A. argentea* G. Don in Borrer Herb. Trevelyan Veg. of Faroes sec. ed. 8." Babington adds "Borrer's is an original wild specimen gathered by the late George Don upon (*sic*) the Clova mountains many years since. Prof. (David) Don also informs me that his father had gathered it in Skye. George Don sent living specimens to various gardens." Babington says that as Don never published the name *argentea*, and as Lamarck had already used the name, to prevent confusion he gives it the name *conjuncta*. In *Eng. Bot. Suppl.* t. 2983, 1864, Babington supplies an account of *A. conjuncta*, and says the garden plant from which the figure is derived "is from one of Mr Don's original specimens gathered at Clova, Forfarshire." He adds that "*alpina* (*E.B.* t. 244) was also drawn from a garden specimen of *conjuncta* altered to its present state by the directions of Sir J. E Smith, who saw it did not represent true *alpina*. The original drawing with notes annexed is a proof of this. Thus t. 244 does not represent either plant. In this *Supplement* drawing the engraver has made the lowest and outline leaves appear as if peltate, whereas the external smaller lobes are never quite connected together, although at times they even overlap. Wherever we can trace the history of plants of *conjuncta* they are stated to have been obtained from the late Mr G. Don. In 1853 Mr A. O. Black found a large patch 8—10 feet square in Clova. (See spec. in Herb. Borrer.) In 1832 Dr N. Tyache (Tyacke) gathered it near the head of Glen Sannox, Goat Fell, Arran." On J. W. Salter's drawing (at Oxford) for the *Supplement*, Babington remarks, "Look at form of leaf in its hollow—drawing beautiful there, not so plate. Dear Sowerby, make the leaves exactly shape of . . . I must finish the root." The figure is from G. Don's original specimen, Clova; the colour is from the Royal Botanic Garden specimen July 1, 1848. On a separate sheet are two dried specimens from the Roy. Bot. Gard., dated 1848. In the *Manual*, 90, 1843, Babington adds a locality "Gatesgarth Pass, Cumberland, Messrs Dovaston and Bowman," which was withdrawn in subsequent editions. The admission of *A. argentea* to our British list was not, however, to remain unchallenged. Watson (*Cybele Brit.* i., 363, 1847) queries it as "Incognit, 12—15. Said to have been collected by Mr J. E. Bowman in Gatesgarth Dale or Pass, in Cumberland, as also by Mr G. Don on the Clova Mountains. Mr Don's specimens are still in herbaria; but I suspect some mistake, the specimens appearing so like these from gardens. And the late Mr Bowman expressly stated that the plant brought by himself from Gatesgarth Dale was *A. alpina*, which remained unchanged in his garden." Watson in later years (*Comp. Cybele* iii., 471, 1870) discusses its claims for inclusion in the British flora. In addition to the foregoing records he says there was a living example shown in a collection of British plants competing for a prize at a flower show at the Botanic Garden. It was labelled "*A. alpina*—Wales," the mistake or trick of a gardener (*Cyb.* 423, 1852). Regarding the Gatesgarth locality he says Bowman himself said the plant was *alpina*, and the plant he brought thence remained unchanged in his garden. Borrer searched the locality in vain. Watson, however, very hastily and erroneously dismisses the Forfarshire locality—"George Don distributed examples ostensibly from Clova, but Don habitually sent garden examples of supposed wild plants, so that his testimony alone goes for nothing." It did not rest on Don alone, for it had been corroborated by Black in 1853. Mr A. O. Black says "The exact station is about 300 feet from the base of the Glen Dole side of Craig Rennet, Clova, on the left-hand side of the first *large* ravine which comes down from Craig Rennet on entering Glen Dole." But Black is treated as summarily, for Watson says—"Black also reported the plant from Forfarshire, but he was convicted of reporting a planted American shrub as if also a true native of that county." The facts are these:—In *Gard. Chronicle* Black reported having seen "*Diervilla canadensis* near Gannachy growing in large scattered clumps, often for as much as forty feet, preventing by the denseness of its foliage the growth of all other plants except the *Pyrola secunda*, which luxuriated beneath it. There are no houses near, and the plant, if not truly wild, which its abundance would induce a person to consider it, is at least perfectly naturalised." Having thus unfairly misrepresented Black, Mr Watson rather rudely attacks Dr Tyacke, spelling his name with inverted commas, who "is also stated to have found the plant in Arran, an island frequently visited by botanists, less fortunate than this Dr Tyacke. If that habitat can be verified by some second collector it will remove *conjuncta* from the group of ambiguities." Dr Tyacke was a member of the Botanical Society of Edinburgh, and was critical enough to distinguish *Lamium intermedium* as British, a plant that Don had previously detected as a new species in Forfarshire. Fortunately four of Tyacke's original specimens are still preserved in the Museum at Chichester, as the Rev. Prebendary Burdon has kindly ascertained. Boswell Syme (*Eng. Bot.* ed. 3, iii., 139) under *A. conjuncta* says, "Very rare, if really occurring wild in Britain." He describes it from a cultivated plant as follows:—"Rootstock branched; stems several, decumbent at base, then ascending, 6 to 15 inches long, silky. Root leaves on petioles 2 to 6 inches long; lamina 2 to 3 inches in diameter; lobes blunt and rounded at the apex, sharply serrated nearly half way down, plicate when young, flat when mature, deep green above, with an edging of silky hairs, brilliant silky beneath, the basal lobes scarcely more separated than the others, so that the leaf appears peltate; stem leaves reniform. Stipules of the lower stem leaves submembraneous, silky, with a few large triangular teeth at the apex, those of the uppermost leaves with the free portion entirely herbaceous and longer than the tubular part. Flowers $\frac{1}{8}$ inch across, greenish yellow, with the segments ovate, spreading in the form of a cross. Calyx and pedicel silky; achene $\frac{1}{16}$ inch long, broadest a little above the base, then narrowing gradually to the point." The Rev. R. Wood, incumbent of Westward, Cumberland (Trimen's *Journ. Bot.* 308, 1872), says a plant "was found by Mr Dickinson of Thorncroft, many years ago, on one of our fells and preserved in his garden as *alpini*, . . . some specimens [from the garden] were sent to me which I discovered to be *A. conjuncta.*" Mr Wood sent me specimens from his garden, but he said they were originally gathered [by Dickinson] in Cumberland. He never, so far as I am aware, collected it himself, as is suggested (*Rep. B.E.C.* 48, 1881). There it still awaits discovery. A cultivated specimen from R. Wood is in Herb. Kew. Hooker speaks of it not as variety but as a sport. In *Notes from the Royal Botanic Garden Edin.* 107, 1904—*Life and Work of G. Don*—I gave a summary of its history, and speaking of the Clova locality said it awaited discovery there. In my herbarium there is a garden specimen dated 1871 said to have been brought from Ben Lawers by Mr J. Morley of Birmingham. In 1916 Mr W. Barclay of Perth kindly conducted me to a little-used railway cutting on the west side of the Tay near Perth, where a nice patch of *argentea* was growing which he had known for some years, but this was probably of garden origin.

This completes its history as a British plant until Mr Corstorphine's fortunate rediscovery of it in Black's and doubtless also Don's original Clova station, which is a perfectly natural habitat, giving the plant a distinct status as a native species. The question of its name is not clear from difficulty. *A. argentea* Don ex Trevelyan is a compound species, that is, Trevelyan added to Don's plant another distinct species which Buser (*Bericht. Schweiz. Bot. Ges.* iv., 58, 1894 in obs.) separated and named *A. faroensis*. This and *alpina* were the only

Alchemillae seen by Ostenfeld in the Faroes (Warming *Bot. Faroes* 76). There is an earlier *A. argentea* (that of Lamarck *Fl. Fr.* iii., 303), but as botanical authors are unanimous in treating it as a mere synonym of *alpina* (even M. Buser in his large number of segregates has not identified it with either), and as Rouy and Camus ignore it in *Flore de France*, Lamarck's name sinks in synonymy, and *argentea* is open for application to another species. Since the dual nature of *A. argentea* Trevelyan has been simplified by the removal of the Faroe plant, *A. argentea* Don emend. is available for the Scottish plant. *Conjuncta* was given by Babington not because he thought it distinct from Trevelyan's plant, but from the mistaken idea that *argentea* once having been used in a different sense was not again available owing to a possible confusion. His *conjuncta* was also a compound species, including *faroensis* as well as *argentea*. Even in Groves' edition of the *Manual*, *A. fissa* (Fl. Dan. t. 2101) is cited for it, and this Lange (Nov. Fl. Dan.) says is *faroensis*. *A. faroensis* has its affinity with *splendens*. It has much less silvery undersides to its leaves than *argentea*, and the teeth of the leaflets are longer and more acute. Bŭser restricts *conjuncta* and uses it for the narrower-leaved limestone plant of the Dauphiny and Jura. Therefore it seems best to call our British plant by the name Don originally gave it—*A. argentea*.

What is its correct grade—a species, sub-species, variety, sport, or hybrid? There exist authorities for each grade. In favour of its being a full species are the facts that it seeds freely, and that its seedlings are like its parent and show no reversions to *alpina* or *vulgaris*. That it differs physiologically is proved by its flourishing even in suburban gardens where *alpina* soon dies out, and by its hybridising with *alpina*. That it is a hybrid is very doubtful, and appears to be without supporting evidence. Is it a sport? Its remarkable distribution in Britain—which, however, is by no means properly ascertained—does indeed somewhat favour its being a mutant. The last word on this has not been said, but with our present inadequate knowledge it may at present be dismissed. Its differences from *alpina* are too great for a variety and the question of calling it a sub-species is one rather for individual opinion. Much may be said for and against. The plant will stand in our List as—*A. argentea* G. Don emend. Ang. 1? Scot. 2 [2] 1?. 70 Cumberland? Dickinson; 88 M. Perth (!) Barclay, adventit.; 90 Forfar (!) G. Don, Black, and Corstorphine; 100 Glen Sannox, Arran (!) Tyacke and

Slater; 104 Skye, G. Don, teste D. Don?; 112 Shetland, Beeby, adventit.

Mr Corstorphine's discovery therefore not only establishes its occurrence as a native plant in Scotland, it does more—it offers a salutary rebuke to botanists who make dogmatic statements about old plant-records culled from the limited horizon of a small library. It also shows how difficult it is to be sure that a place has been thoroughly explored. Black's locality was given far more precisely than is usual, yet, among others, I had made at least half a dozen visits to the Dole after this plant and failed to find it. I had searched the ravine far too high, and it was only last year that it dawned on me that the trough of the valley rather than the cliffs was more likely to be the station. Surely with this example other plants of Don's may be refound. *Savastana* in Glen Kelly, and '*Sagina maritima*' on Ben Nevis are at once suggested.

A. argentea × *alpina* = × *A. Bakeri*, hybr. nov. This appeared growing with both parents in the rock-work at Kew (see J. G. Baker in Herb. Kew.) in 1869. The seedlings have the central lobe almost cut to the base and the side ones connate. They are more elongate than in *argentea*.

952 (2). ROSA RUGOSA Thunb. Fl. Jap. 213, sub-var. ALBA Druce. In the *Gard. Chron.* 65, August 18, 1917, Sir Herbert Maxwell says he found that on the sandy coast of Monreith, Wigton, far from houses, a stray plant of this well known Japanese species had spread far and wide along a sandy bank. Here, established on pure sea-sand, it has acquired a character vastly superior to that which it displays in cultivation. The bank is thickly covered with *Convolvulus Soldanella*.

966. CRATAEGUS MONOGYNA Jacq., var. SIMPLICIFOLIA, var. nov. This plant has the large petals of *oxyacanthoides*. Leaves sub-simple, elliptic, nearly entire, slightly notched in the upper half, thin in texture; style 1, erect, Hardwick Wood, Cambridge, 1897, G. GOODE. Another form with a 3-lobed leaf, the veins rather incurved, coriaceous, style 1, bent, Brean Down, Somerset, 1896, Mrs GREGORY in *Hb. C. E. Salmon*. This variety may include hybrids of *monogyna* and *oxyacanthoides*. It differs from the latter in the less glossy foliage and solitary style.

966. C. MONOGYNA Jacq., var. GLABRA Sonder, forma. A beautiful form with the petals persistent when the fruit has well developed. It has one bent style, glabrous fruit, leaves rather small. Saintfield, Co. Down, Mrs C. H. WADDELL, ex C. E. SALMON.

966. C. MONOGYNA Jacq. Epsom, Surrey. Mr H. C. Watson's specimen, 1845, labelled *C. Oxyacantha*, var. *eriocarpa*, is *C. monogyna.*

966. C. MONOGYNA Jacq., var. SUBCRISTATA Druce. A curious form. The leaves 3-lobed, veins somewhat incurved; style, one; fruit long, narrow, and one-stoned; calyx lobes, erect. Bicknell, near Wroughton, Wilts., Miss TODD. This form is not unlikely of hybrid origin.

993 (5). SAXIFRAGA TRIFURCATA Schrad. Hort. Gott. fasc. i., 13. Alien, Spain. Wall top, Adel, near Leeds, 1916, E. C. HORRELL.

976 (2). S. LEPTOPHYLLA D. Don Mon. Sax. in Trans. Linn. Soc. xiii., 150 (? not of Persoon). See *Rep. Wats. Exch. Club*, 17, 1916. Root from Cwm Idwal, Carnarvonshire. Coll. J. GRIFFITH many years ago and sent as *S. groenlandica*, var. nov. *Griffithii* Guermonprez, in *lit.* Cult. Bangor, 1916. The Rev. E. S. Marshall (*l.c.*) identifies it as being the same as a well-marked saxifrage which he gathered in Cwm Idwal and on and near Snowdon. Mr F. N. Williams doubts its identity with Persoon's *leptophylla*, and proposes to call it *arvonica*. Mr J. Griffith, however, thinks *leptophylla* is not uncommon on the Snowdon range, although, in spite of searching for many subsequent years, he only once collected this plant. He showed me *Griffithii* growing in his garden last year. It seems a distinct species, remaining quite constant in culture. M. Guermonprez, who made a close study of this group, named it *S. groenlandica*, var. *Griffithii*, but never published the name. In a letter of his in my possession he says: "In this the leaf-lobes are somewhat mucronate or . . . aristate pointed . . . The plant is not stoloniferous."

1015. SEDUM DRUCEI Graebner, in *Rep. B.E.C.* 160, 1912. The specific grade of this plant has been recently challenged. The *Sedum* was noticed on the Phyto-Geographical Excursion in 1911, and was stated by the erudite author of the *Syn. Fl. Mitt.-Eur.*, Dr Graebner, Professor of Botany at Berlin, to be quite distinct from the common form of *S. acre* on the continent. The statement came quite as a surprise to me, because one had never questioned the identity of the British with the continental *acre*. Descriptions are not of great value and herbarium specimens are usually inadequate in dealing with critical forms of this group. Dr Graebner took plants back with him and grew them side by side with the continental plant and found they kept quite distinct. He considered it to be an endemic form. In the *Rep. B.E.C.*, *l.c.*, I ventured to suggest that the occurrence of our plant in France, etc., was not unlikely. Illness prevented my visiting the continent until 1913, when a flying visit was paid to the Auvergne. There I saw *acre*, a different form from our British plant, but from which I should only have separated it varietally. Plants brought home died in my garden. In 1914 I saw the same plant in Dalmatia and on the Rhine side near Schaffhausen. The petals were half as long again as those of our plant; the leaves much larger, more succulent and more closely approximate; the plants more erect and lacking the trailing shoots. No plants like the British one Graebner described were seen. Plants brought from the Rhine side died, although *S. sexangulare* from the same place is still living. To obtain independent opinions, I sent British plants to Sweden (about which I have had no report), and to Dr Schroeter of Zurich, who is by no means a splitter. He cultivated them and compared them with Swiss *acre*, and considers that the differences "vis-à-vis du *S. acre* ne sont très suffisantes pour en faire une espèce distincte, mais qu'il s'agit d'une variété (race?) voisine de la var. *neglectum* (Ten.) Rouy & Camus." My own view was and is that our common British plant is not distinct as a big species from *acre*. Therefore, without giving it any grade, I put it under *acre* in the thirteenth edition of *Hayward's Bot. Pocket Book*. It essentially differs in its acridity from *neglectum* Tenore, which is almost devoid of taste. It must be remembered that Prof. Graebner is not only a highly skilled critical botanist, but a practical horticulturist, and that his view of species is a generous one. Unfortunately he cannot now give evidence.

1058 (2). EPILOBIUM PEDUNCULARE A. Cunn. sens Hausskn. = *E. nummulariifolium*, sub-sp. *nerterioides* (A. Cunn.) T. Kirk. Alien, New Zealand. Near Leeds, York, 1916, F. A. Lees.

1126. ANTHRISCUS SYLVESTRIS (L.) Hoffm. H. E. Petersen *Dansk. Bot. Arkiv.* i., 1-152, 1915 (see *Rep. B.E.C.* 412, 1916, and

Bot. Centralb. 115, 1917) has divided the forms of this plant into 16 groups based upon the leaf-form. The description of the groups is as follows :—

Division I. The foliaceous part of the median nerve of the terminal segments clearly broadening from the 6th to the 8th lateral lobe (counted from the terminal lobe) to the terminal lobe.

Group 1. BREVISECUNDA. The terminal lobes of the lateral segments of the 3rd order with a base more than 8-tenths of their length, often as much as 3 times longer than the edge of the next lateral lobe.

Group 2. LATIOR BREVIDIVISA. The term. lobes of the lat. seg. of the 3rd ord. have a base of about 7—9 tenths of their length. The sup. lat. lobe of these leaflets with an edge generally longer than ½ of the base.

Group 3. LATADIVISA. The base of the term. lobes of the lat. seg. of the 3rd ord. with a breadth of 6—10 tenths of the length. The term. lobes often oblong, more or less ovate.

Group 4. ENSIS. The term. lobes of the seg. of the 3rd ord. have a broad base of 6—10 tenths of their length. They are always distinctly acute and are generally broadest near the base.

Group 5. MOLLIS. The term. lobes of the seg. of the 3rd ord. have a base the breadth of which is 6—9 tenths of their length. They are always distinctly acute and are generally broadest a little above the base.

Group 6. DIVENSIS MAJOR. The lobes, etc., are distinctly pointed.

Group 7. ACIPHYLLA MAJOR. The lobes, etc., all very long and pointed.

Group 8. BREVIDIVISA. The lobes, etc., have a base of about 5—7 tenths of their length. The entire lat. lobes are never 3 times longer than broad, and have generally an inferior contour, which shows concave and convex parts almost equally long.

Group 9. MOLLITERES. The lobes, etc., are pointed and narrowed at the base.

Group 10. DISSECTA. The lobes, etc., are oblong, pointed.

Group 11. SEMIENSIS. The lobes, etc., are sometimes pointed and narrowed at the base.

Group 12. DENSIMINOR. The lobes, etc., with a base 7—8 tenths of their length. The ent. lat. lobes are not 3 times longer than broad, and the convex part of the inferior contour is generally two-thirds longer than the whole length.

Group 13. DIVENSIS MINOR. Like the 6th group, except that the term. lobes of the seg. of the 3rd ord. have a shorter base (4—6 tenths of their length), and the spaces between the ent. lat. lobes are usually larger than the lobes themselves.

Group 14. ACIPHYLLA MINOR. Like the 7th group, except that the term. lobes of the seg. of the 3rd ord. have a shorter base (about 4-tenths of their length), the spaces between the ent. lat. lobes are usually larger than the lobes themselves, and the involucral bracts are typical.

Group 15. PUGIENSIS. The ent. lat. lobes are linear, serrate, less than 3 times longer than broad, and the convex part of the inferior contour is quite twice the length of the concave.

Division II. The foliaceous part of the median nerve not broadening from the 6th to the 8th lat. lobe.

Group 16. TERES. The term. lobes, etc., with a base of about 4-tenths of the length, generally acuminate. The ent. lat. lobes are linear, serrate, generally 3 times longer than broad, with the convex part longer than the concave.

Matonshek (*l.c.*) says it is evident that the differences between these groups are essentially based on the development of the extent of the limb and on the breadth of the lobes. One sees by a comparison of the various figures on plates 2-18 that it is a question of a series of forms of which the foliaceous area becomes smaller and smaller. The broadest types are in the groups *Brevisecunda*, *Latior*, *Brevidivisa*, *Latadivisa*, *Mollis*, and *Ensis;* the narrowest in the groups *Teres*, *Pugiensis*, *Aciphylla minor*, *Divensis minor*, *Densiminor;* and the medium types in the groups *Divensis major*, *Aciphylla major*, *Brevidivisa*, *Molliteres*, *Dissecta*, *Semiensis*. Alongside these differences there is a varied development of the limb of the lobes—broad and rounded to narrow and pointed. Analogous differences are similarly to be found in other polymorphous species, as for example, in *Œnothera Lamarckiana* and *Erophila verna*. Some of the forms have been cultivated, seeds obtained by self-pollination, and young plants grown (in several cases to the third generation). The result of these experiments is that there is generally great geno-typical differences between the forms of the various groups—for example, between the forms of *Brevisecunda* and those of *Aciphylla major*—always perhaps with the exception of the groups *Dirensis major* and *minor*, *Aciphylla major* and *minor*, and *Dirensis* and *Ensis*. Experiments appear to indicate that each of these groups is only a fluctuating variation of a single type. It is, however, the opinion of the author that these groups differ also in their geno typical character. Experiments alone can prove it. The study of the distribution of the forms of the groups 1—16 in Denmark and in part of Sweden has been carried out by statistical methods.

1137 *b*. ŒNANTHE LACHENALII Gmel., var. APPROXIMATA (Mérat) Koch. Syn. 1251, 1857. *Œ. approximata* Mérat Nouv. Fl. Paris, 115. Benacre Broad, Suffolk, E., A. R. HORWOOD, teste A. BENNETT. This (teste Rouy & Camus *Fl. Fr.* vii., 261) differs from the type in having the trifid segments of the pinnatisect radical leaves "cunéiformes obtus;" in the type the bipinnatisect radical leaves have obovate "incisés crénulés" segments. In Britain I have the type from Headington, Oxford; Wick: and Freshwater, Isle of Wight. *Approximata*, however, seems the more general form. I have collected it at Dawlish, S. Devon: Newquay, Cornwall: Marcham, Berks; Surlingham, Norfolk: Trearddur, Anglesey: and Port Logan, Wigton, G. C. DRUCE.

1140. CAPNOPHYLLUM PEREGRINUM Lange in Willk. & Lange Prod. Fl. Hisp. iii., 33, 1874. *Tordylium peregrinum* L. Mant. 55, 1767. *C. dichotomum* Lange. Alien, S. Europe. St. Philip's Marsh, Bristol, Miss COBBE and G. C. DRUCE. Already recorded in the *Brit. Pl. List*, 32, as *C. dichotomum*. The above retains the earlier trivial.

1160. DAUCUS CAROTA L., var. COMOSUS Grognot ap. Carion Cat. Pl. Saône et Loire 156. Involucral leaves much longer than umbel. Ventnor, Isle of Wight; Oxford, G. C. DRUCE.

1164 (2). D. HISPANICUS (Lam.) comb. nov. *Caucalis hispanica* Lam. Enc. i., 658. *Durieua hispanica* Boiss. & Reut. Diagn. Pl. Hisp 14. *Daucus durieua* Lange Prod. Fl. Hisp. iii. 23, i., 1880. Alien, Spain, N. Africa. Galashiels, Selkirk, 1916, Miss I. M HAYWARD. Dr Thellung suggests this name. *Daucus hispanicus* Gouan is (teste *Ind. Kew.*) *D. Gingidium* L

Gen. 264 (2). VALANTIA (Tourn.) L. (*Vaillantia*).

1191 (5). V. MURALIS L. Alien, S. Europe. Several plants near Musselburgh, Edinburgh, J. FRASER in *Rep. Bot. Soc. Edin.* 404, 1915.

1193. GALIUM MOLLUGO L. × G. VERUM L., var. MARITIMUM DC., hybr. nov. Hayling Island, S. Hants., in great plenty and showing all grades between *verum* on one side and *Mollugo* on the other. Since the only form of *verum* there was the var. *maritimum* DC., this is a new hybrid. The enormous quantities gave very pleasing colour effects from the bright golden yellow nearest *verum* through various tints of yellow to cream and creamy white. The Rev. Prebendary Burdon and the Rev. J. Parrington were with me when it was observed. (Var. *maritimum* = *littorale* Bréb.)

1237. SCABIOSA SUCCISA L., var. OVALIS Rouy Fl. Fr. viii., 115, 1903. Stem short, 15--25 cm., simple; cauline leaves sublinear. Moel Hebog, Carnarvon; The Glen, Peebles. In these plants the leaves were glabrescent.

1242 (3). GRINDELIA GRANDIFLORA Hook. Bot. Mag. t. 4625. Alien, W. America. A garden escape, Headington, Oxon., ex Hon. Mrs GUY BARING.

1242 (4). G. ROBUSTA Nutt. in Trans. Am. Phil. Soc. n.s. vii., 314, 1841. Alien, California. Southport, Lancs., 1916, J. D. FIRTH.

1262 (5). ERIGERON PHILADELPHICUM L. Alien, N. America. Tintern, Monmouth, 1916, J. LAMB—to replace *E. caucasicum*, which it was first thought to be.

1294 (2). XANTHIUM CANADENSE Mill. *X. macrocarpum* DC. Fl. Fr. Suppl. 356. Alien, N. America. Birkenhead, J. A. WHELDON.

Gen. 299 (2). LEPACHYS Rafin. Journ. Phys. vol. 89. 100, 1819.

1297 (5). L. COLUMNARIS Torrey & Gray Fl. N. Amer. ii., 315. *Rudbeckia columnaris* Sims Bot. Mag. t. 1601. Alien, N. & N.-W. America. It is known on the western plains and prairies as the Prairie Cone-flower. On remount ground, Bristol, 1917, Miss I. M. ROPER.

1302 (4). HELIANTHUS STRUMOSUS L., var. MOLLIS (Willd.) Torrey & Gray. Alien, N. America. Waste ground, Oxford, 1898, G. C. DRUCE. Det. A. THELLUNG.

1302 (5). H. BOLANDERI A. Gray in Proc. Am. Acad. vi., 544, 1865. Alien, California. On fields at Patricroft, S. Lancs., 1914, T. KILSBY, teste A. THELLUNG. This is made synonymous with *H. scaberrimus* (quid) in *Ind. Kew.* It is said to be a different species from *H. scaberrimus* Elliot.

1302 (6). H. SEROTINUS Tausch in Flora xi., 504, 1828. Alien. N. America. Waste heaps, Ware, Herts.. 1916, J. HIGGENS, teste A. THELLUNG.

1302 (7). H. LAETIFLORUS Pers. Syn. ii, 476. Alien, N. America. Galashiels, Selkirk, 1916, Miss I. M. HAYWARD, teste A. THELLUNG (with reservation).

Gen. 301 (2). SPILANTHES Jacq. Enum. Pl. Carib. 8, 1760.

1304 (5). S. DECUMBENS (Sm.) A. H. Moore in Proc. Am. Acad. xlii., 549, n. 55, 1907. *Rudbeckia decumbens* Sm. in Rees Cycl. xxx., n. 11, 1815.

Var. LEPTOPHYLLA (DC.) A. H. Moore. (*S. leptophylla* DC. Prod. v., 621, 1836, in *Ind. Kew.*, made = *arnicioides*). Alien, S. America —Brazil, Paraguay, Uruguay, Argentina. St. Philip's, Bristol, 1916, Mrs SANDWITH. Det. A. THELLUNG.

1309. ? BIDENS CERNUA × TRIPARTITA. On the borders of a pond at Brownlow Harts Farm, Sibbertoft, Northants., is a *Bidens* exactly like the one at Putney-on-Thames which I saw years ago, and which Sir J. D. Hooker names in the third edition of his *Student's Flora.* Surely both are the above hybrid or more likely *B. tripartita* × *cernua.* The characters are wholly mixed. Leaves generally entire, perhaps 1 in 20 (this season) three-cleft, always more or less stalked; heads sub-erect as a rule, but a few nodding: pappus bristles 2—4, generally but not always 3. It is just like the Putney form as regards its mixed characters. It is quite fertile and may be *B. tripartita* × (*cernua* × *tripartita*). It is certainly neither type *cernua* nor *tripartita.* E. A. WOODRUFFE-PEACOCK, in *lit.* Hooker (*Student's Flora* 211, 1870) says a Thames form has broader heads, more numerous florets, and 3—4 pappus bristles. In 1878 I found a somewhat similar plant by the Canal at Northampton. The upper leaves were simple and much resembled those of *cernua.* (*Flora Northants. N. H. J. of Nton.* ii., 279, 1883).

1311 (3). BIDENS BIPINNATA L. Spanish Needles. Alien, N. America, Mexico, Trop. America. Near woollen mills, Selkirk, 1916, Miss I. M. HAYWARD.

Gen. 310 (2). BAHIA Lag. Gen. et Sp. Nov. 30, 1816.
1319 (10). B. NEOMEXICANA A. Gray in Proc. Am. Acad. xix., 27, 1883. Alien, N. America, Colorado, Mexico. Near woollen mills, Selkirk, 1916, Miss I. M. HAYWARD. The name is suggested (with a query) by Dr THELLUNG.

1320. SCHKUHRIA PINNATA O. Kuntze, vice S. *abrotanoides* Roth.

1320 (3). S. ADVENA Thell. in Fedde Rep. xi., 308, 1912. A lanal alien. Native home uncertain, probably S. America. Adventive in Transvaal, S. Africa; Hanover; Rodleben, Holland; Wormeweer, etc. Bristol, Mrs SANDWITH, teste A. THELLUNG.

1329. ACHILLEA MILLEFOLIUM L., var. CONSPICUA mihi. Ligules large, pink or white; the blade 3—4 mm. by 3 mm.; plant usually robust. Beddgelert, Carnarvon, August 1917; on the trenches, The Parks, Oxford, September 1917; Pembrey, Carmarthen, 1916; sent also by W. J. GREENWOOD from Foss Cross, E. Gloster, 1917, G. C. DRUCE.

Gen. 322 (5). ISOETOPSIS Turcz. in Bull. Soc. Nat. Mosc. xxiv., i., 174, 1851.
1363 (2). I. GRAMINIFOLIA Turczaninow. Alien, Australia. Tweedside, between Galashiels and Melrose, Roxburghshire, 1916, Miss I. M. HAYWARD.

1365 (12). SOLIVA NASTURTIIFOLIA DC. Prod. vi., 142, 1837. *S. stolonifera* Loudon. *Gymnostyles nasturtiifolia* A. Juss. in Ann. Mus. Par. iv., 212, 1804. Alien, S. America. Lanal. Ettrick side, Selkirk, 1916, Miss I. M. HAYWARD. Suggested to compare, A. THELLUNG. The plant is naturalised in N. America from N. Carolina to Florida, and in Louisiana.

1384. TUSSILAGO FARFARA L. With pink florets, Bentley, Durham, J. HESLOP-HARRISON, in *lit.*

1393 (2). SENECIO ERRATICUS Bert. Amoen. Ital., 92. *S. aquaticus* Sm. Prod. Fl. Gr. ii., 178. *S. Jacobaea*, var. *erraticus* Beck. Fl. N. Oester., 1222. Lower leaves deeply lyrate, the terminal segment large, cordate, truncate or slightly narrowed at base, rounded at the top, oval or oblong; lateral segments of cauline leaves patent, with straight angles, oblong, toothed; peduncles divaricate, slender: flower-heads small. This differs from *Jacobaea* in the thickened rootstock; in the larger terminal lobe to the upper leaves being distinctly larger than the lateral; in the spreading peduncle, and the elliptic-lanceolate (not lanceolate) phyllaries; and from *aquatica* in the less deeply lyrate lower leaves, the more oblique and narrower lateral segments of the stem leaves, which are entire or only slightly toothed, and the spreading or ascending peduncles. The flower-heads of *S. aquatica* are about a third larger than in *erraticus*. Koch (*Syn. Fl. Germ.* 388) italicises the characters of *erraticus*, "pinnis dentatis subquinis lateralibus patentissimis obovato-oblongis." Babington (*Prim. Fl. Sarn.* 53, 1839) records *erraticus* from Jersey on the authority of La Gasca, and from marshes behind Ivy Castle, Guernsey, and he says it grows at Buttington, Montgomery. Babington's record has been thought to belong (Hook. *Stud. Fl.* 582, 1884) to a large state of *aquaticus*. That Babington was mistaken is borne out by the fact that he has a var. *major* of *aquaticus* (*Manual* 179, 1847) which he queries as *erraticus* Bert. In the edition of 1851, p. 178, he leaves out any reference to Bertoloni's plant, and in the seventh edition of 1874 the variety *major* as a name itself disappears. He, however, refers to "a larger much branched form, leaves all lyrate, terminal lobe truncate or subcordate below, segments subspathulate." In the ninth edition, 214, 1904, he adds, "this was supposed to be *erraticus* Bert." In 1832 M. J. Gay visited the Channel Islands and found *S. erraticus* Bert., a plant he doubtless knew well, on August 10, between Cobo and Vale, Guernsey, but sought for it in vain in Jersey. That portion of the island has, however, in recent years undergone so great a change that the plant may well have disappeared, but it is highly desirable that careful search should be made to rediscover the plant. It seems at best to deserve only the rank of sub-species under *aquaticus*, although Koch, Brébisson, Grenier and Godron, Boreau, Coste, and Nyman keep it as a distinct species. Brébisson says that it differs from *aquaticus* in its stronger and less hairy stem; its larger number of slender, open, divaricate branches; the terminal segment of the leaves being broad, ovate and rounded at the apex; in its smaller flower-heads and leaves of a more sombre green.

1412 (11). BERKEYHA PINNATA Less. Syn. Comp. 75. *Stobaea pinnata* Thunb. Alien, S. Africa. Bradford, York, 1917, J. CRYER. Det., with some doubt, A. THELLUNG.

1422 *b*. CARDUUS NUTANS L., var. MACROCEPHALUS (Desf. Fl. Atlant. ii., 245, 1800, as a species). *C. nutans*, sub-sp. *macrocephalus* Gugler. St. Philip's, Bristol, 1916, Miss COBBE and G. C. DRUCE; Woodhall Spa, Lincoln, 1917, Rev. F. ALSTON.

1430. CIRSIUM PRATENSE (Huds.) Druce, var. POLYCEPHALUM (Coss. & Germ.) Druce in Rep. B.E.C. 417, 1916. Recently a type specimen of Watson's labelled *Carduus pratensis*, var. *Pseudo-Forsteri*, gathered near Esher Station, Surrey, in 1866, has come into my hands. It is quite ordinary *Cirsium pratense*, about 6 dm. high, except that the stem bifurcates about half-way up, thus bearing two heads of quite normal flowers. Watson does not seem to have described it as a variety, but he distributed it through the *B.E.C.* in 1866 (see *Rep.*, p. 10) under the name *Carduus Pseudo-Forsteri*, and adds "this luxuriant form of *C. pratense* has been often misnamed *C. Forsteri*" (*e.g.*, by Sir W. Hooker, Mr Mill, &c.). The curators, Baker and Trimen, add a note that "it does not differ from the usual *pratensis* except in size." Therefore, *Pseudo-Forsteri* is a nomen nudum, but even if it had been described it is antedated by Cosson & Germain's trivial *polycephalum*, which dates from the *Fl. Env. Paris* 417, 1845. In the *Rep. B.E.C.*, *l.c.*, I have associated that name with a plant especially common in Ireland which has two or more heads of flowers and the leaves rather deeply sinuate or cut—a plant often mistaken for the hybrid with *palustre*, *e.g.*, × *C. Forsteri*. G. C. DRUCE.

1451 (5). CENTAUREA TRICHOCEPHALA M. Bieb., ex Willd. Sp. Pl. iii., 2286. *C. Simonkaiana* van Hayek. Alien, Hungary to Persia, E. Europe, and West Asia. Chicken run at Tower-le-Moor, Lincoln, Rev. F. ALSTON.

1457 (2). C. STOEBE L., sub-sp. RHENANA (Bor.) Schinz & Thell. With the above, 1917.

1459 (4). C. DIFFUSA Lam. × C. STOEBE L. (? sub-sp. RHENANA) = C. PSAMMAOGENA G. Gayer in Maygar Bot. Lapok viii., 59, 1909. Alien, E. Europe. Chicken run at Tower-le-Moor, Lincoln, September 1917, Rev. F. ALSTON. Teste A. THELLUNG.

1480 *b*. CICHORIUM INTYBUS L., var. GLABRATUM (Presl). Hutton Bushell, York, August 1916, E. C. HORRELL.

1486. RHAGADIOLUS CRETICUS (L.) All. Fl. Pedem. i., 226, 1785. *Hedypnois cretica* Willd. Sp. Pl. iii., 1617. *R. Hedypnois* All. *I.K.* Alien, Europe. Ware, Herts, 1916, J. HIGGENS and G. C. DRUCE. Teste A. THELLUNG. Previously recorded.

1645. TARAXACUM VULGARE Schrank, var. RUBRINERVE (Jord.). The stalk and the median nerve of leaf red, external involucral bracts reddish. Bangor, Carnarvon, August 1917, G. C. DRUCE.

1650. LACTUCA SALIGNA L., var. CRACOVIENSIS Rouy Fl. Fr. ix., 198, 1905. Whitstable, Kent. Cauline leaves for the most part entire, elongate, linear, smooth at the sides. In *runcinata* the median cauline leaves are runcinate, and the edges have spinescent hairs ; in *Ruppiana* the median and upper cauline leaves are entire, lanceolate, the sides having rough hairs.

1652 (2). LACTUCA PLUMIERI Gren. & Godr. Fl. Fr. ii., 322, 1852. *Mulgedium Plumieri* DC. Prod. vii., 248. *Sonchus Plumieri* L. Alien, mountainous woody places of Central Europe and N. Spain. This differs from *L. alpina* in having glabrous peduncles and involucral bracts. Found by Mr F. W. Stansfield, apparently wild, in the neighbourhood of Preston, Lancs. See *Gard. Chron.* 235, 1917.

Gen. 365 (2). UROSPERMUM Scop. Introd. 122, 1777.

1663 (9). U. PICROIDES F. Schmidt in Samm. Phys. Ausf. i., 276, 1795. Alien, S. Europe. Galashiels, Selkirk, Miss I. M. HAYWARD.

1666 (2). JASIONE PERENNIS Lam. Enc. iii., 216. St Martin, Guernsey, "Rochers maritimes," J. Gay *MS.*, 1832. Rouy (*Fl. Fr.* i., 91) keeps this as a distinct species, with a restricted and peculiar distribution, namely, the silicious mountainous districts of the Vosges, the Pyrenees and Corsica, N. Spain, and W. Germany. It differs primarily from *J. montana* in its stoloniferous root-stock, sterile rosettes, and flat leaves. *J. montana* has a simple stem, without barren rosettes, and the leaves are ordinarily undulated. My plants, from the coast near Boulay Bay, seem to be this species, but further investigation is desirable before definitely including it in our List. G. C. DRUCE.

1682 (2). LEGOUSIA BIFLORA Britton in Mem. Torr. Club v., 309, 1894. *Campanula biflora* Ruiz and Pavon Fl. Peruv. ii., 55, t. 200, f. 6, 1799. *Specularia biflora* Fisch. & Mey. Alien, America. Galashiels, Selkirk, 1916, Miss I. M. HAYWARD. Teste A. THELLUNG.

1727. PRIMULA FARINOSA L., sub-var. ALBIFLORA (pure white flowers) and forma ACAULIS. Middleton, Teesdale, Durham, J. HESLOP-HARRISON, in *lit.*

Ord. 56 (3). LOGANIACEAE Lindl. Nat. Syst. 306, 1836.

Gen. 404 (10). DESFONTAINIA Ruiz & Pavon Prod. 29, t. 5, 1794.

1751 (20). D. SPINOSA Ruiz and Pavon, *l.c.* Bot. Mag., t. 4781. Alien, S. America. An ornamental garden shrub, now naturalised at Madryn Castle, Carnarvonshire. Teste J. GRIFFITH.

1762. GENTIANA VERNA L., sub-var. ALBA. Middleton, Teesdale, Durham, J. HESLOP-HARRISON, in *lit.*

1788 (3). LAPPULA STIPITATA (Greene as ALLOCARYA) comb. nov. *Allocarya stipitata* Greene in Pittonia i., 19, 1887. Alien, W. Amer. Watton, Norfolk, 1916, F. ROBINSON. Teste A. THELLUNG.

1806 (2). NONNEA PULLA DC. Fl. Fr. iii., 626. Alien, S. Europe. St. Philip's Marsh, Bristol, 1916, Miss COBBE.

1820. MYOSOTIS COLLINA G. F. Hoffm., var. LEBELII Corbière Fl. Norm. 407. *M. adulterina* Lebel Obs. Pl. Manche 17. *M. Lebelii* Gren. & Godr. Fl. Fr. ii., 532, much altered. *M. hispida*, var. *Lebelii* Rouy, Fouc. & Cam. Fl. Fr. x., 328. Stems much branched from base, with spreading ascending branches; leaves spathulate, upper lanceolate; flowers small, bluish-white or yellowish-white; inflorescence often bracteate at base. Dry sunny banks near Wool, Dorset, May

1917, G. C. DRUCE. To this probably belongs the sand-dune plant at Littlestone-on-Sea, Kent.

1826. ECHIUM ITALICUM L., var. PYRAMIDALE (Lap. Abr. Pyr. 91, 1913, as a species). Cothill, Berks., 1907, G. C. DRUCE; Ware, Herts., 1907, Miss TROWER; on a chicken run at Woodhall Spa, Lincoln, 1917, Rev. F. ALSTON. Mr C. C. Lacaita, who kindly named this segregate of *italicum*, says it agrees with La Perouse's own specimens at Kew, and with the Toulouse plant distributed by Bordère and others. It may be worth the specific distinction claimed for it by its original describer. G. C. DRUCE.

1828 (2). E. TUBERCULATUM Hoffmg. & Link Fl. Port. i., 183. *E. violaceum* Linn. Herb. Alien, S. Europe. Near Bristol, 1917, No. 7, Miss I. M. ROPER. Det., C. C. LACAITA, as probably their var. *latifolium*.

1848 (2). SOLANUM FONTAINESIANUM Dunal in Poir. Enc. Suppl. iii., 777. *Nycterium Fontainesianum* Sweet Bot. Reg. t. 177. Alien, Brazil. On farm waste near Swanage, Dorset, Miss I. M. ROPER.

1851 (6). PHYSALIS MINIMA L. Alien, S. America, etc. Meanwood, Leeds, 1916, E. C. HORRELL; Bradford, York, 1917, J. CRYER, teste A. THELLUNG.

1867. VERBASCUM NIGRUM L. × OLYMPICUM Boiss., hybr. nov. This appeared at Oxford with both parents and in two distinct forms—one a broad and the other a narrow-leaved plant. The flowers are about 25 mm. diameter (in *olympicum* they are 50 mm., in *nigrum*, 15 mm.); the tint is darker than in *olympicum*; the filaments have pale purplish hairs (in *olympicum* they are deep yellow): and the leaves are less soft than in *olympicum*. The narrow-leaved form has linear-lanceolate leaves with sharper crenatures than the broad-leaved form. August 1917, G. C. DRUCE.

1895. SCROPHULARIA SCORODONIA L., sub-var. VIRIDIFLORA mihi. This grows with the type near Par, Cornwall, Miss M. COBBE. Its foliage is of a paler green, and its corolla is pure green (foliis læte-virentibus, corolla viridi). An analagous condition to the sub-var. *Bobarti* (Pryor) as a var. July 1917, G. C. DRUCE.

1906. VERONICA HYBRIDA L., sub-var. ALBIFLORA. Flowers pure white, coming true from seed. Originally found at Gloddaeth, Carnarvonshire, by J. E. GRIFFITH.

Sub-var. PURPURASCENS grows with the above and also keeps true in cultivation.

1943. EUPHRASIA KERNERI × ROSTKOVIANA = × E. RECHINGERI Wettst. Mon. Euphr. 2, 289. In boggy ground in a valley, and in thick spongy turf on Mendip, near Rowberrow, N. Somerset, September 8, 1916, Dr C. BUCKNALL. See *Rep. B.E.C.* 580, 1916. Wettstein says it differs from *Kerneri* in the leaves, bracts and calyces being sparingly clothed with rather short glandular hairs; from *Rostkoviana* in the glandular hairs covering the leaves and calyces being shorter and less numerous Dr Drabble is inclined to think that these plants are merely forms of *Rostkoviana* . . . and resemble plants collected at Cym Idwal by G. Goode, and from Helvellyn, Grisedale, and Cathole, Derby, by himself.

The Genus MELAMPYRUM L.

M. Beauverd in his most valuable and elaborate Monograph, which is reviewed on p. 66, has very minutely described a large series of forms of *M. pratense.* These, and those of the other species, are given here for convenience of reference. All the British specimens cited are in *Herb. Druce* at Oxford and were found by him unless otherwise stated. The spelling of place-names is corrected.

1958. M. CRISTATUM L. Ang. 11 (cited from *Brit. Pl. List*). Two varieties of this are described—*maritimum* Beauv. and *solstitiale* Maly—as well as the type, which alone occurs in Britain. Of the type, he describes four sub-varieties, and of *solstitiale* two.

1959. M. ARVENSE L. Ang. 8 (1). Under this he has four sub-species—*elatius*, *eu-arvense*, *barbatum*, and *ciliatum*. Of *elatius* there are two sub-vars. *Eu-arvense*, to which our British plants belong, has three varieties—*genuinum*, *impunctatum*, and *versicolor*, and four sub-varieties. The British plants are sub-var. TYPICUM Beauv. from Costessy, Norfolk, *Pitchford* in *Dickson Fasc. Brit.* and sub-var. SCHINZII Beauv. in Schinz & Keller *Fl. der Schweiz* 304, 1914. This is mixed with the type in *Dickson Fasc. Brit.* n. 74, but differs from it in the stem being about 40 cm. high and the thick scabrid leaves being about 15 mm. broad. In the type the leaves are narrower (about 4—8 mm. broad) and the plant is rather smaller. The sub-species *barbatum* has four varieties. The sub-species *ciliatum* has a var. *transiens* Beauv. The sub-species *elatius* has two sub-vars. and a form.

1960. M. PRATENSE L. 109. Hib. 39. Beauverd removes the names of two varieties from our list of British Plants—var. *latifolium* Schueb. & Mart. Fl. Würt. 401, 1834, introduced into the *Student's Flora* 274, 1870, without the varietal authority supplied in the 9th edition of Babington's *Man.* 311, 1904 (he says our plant differs from *latifolium* Schueb. & Mart.) and the var. *purpureum* of British authors (see *Rep. B.E.C.* 467, 1909), which he considers to come under *alpestre.* In the elaborate treatment of *M. pratense* M. Beauverd first divides it into two sub-species—*eupratense* and *vulgatum.*

M. EUPRATENSE Beauverd. Corolla post anthesin purpurea vel ± roseo-diluta; antherarum pili basales appendiculas antherarum (appendiculis 2 exterioribus antherarum anticarum exceptis) perspicue excedentes; bracteae inferiores semper integrae; herbae heliophilae. The corolla after flowering more or less pale rose-purple; the basal hairs conspicuously exceeding the appendage of the anthers except in the case of the two exterior appendages of the anterior anthers: the lower bracts always entire. Plants of sunny places.

M. VULGATUM (Persoon) Beauv. Corolla [albida, lutea vel versicolor] post anthesin nigrescens; antherarum pili basales appendiculas antherarum (appendiculis 2 antherarum anticarum exceptis) aequantes subbreviores vel eis sublongiores; bracteae inferiores subdentatae, sequentes gradatim profunde dentatae apicales ± regulariter pectinatae (rarius parum dentatae). The whitish, yellow, or versicoloured corolla becoming black after flowering: the basal hairs of the anthers equalling, or slightly shorter or longer than the appendages of the anthers, except in the case of the two appendages of the anterior anthers: lower bracts subdentate, those above more deeply cut, the apical more or less regularly pectinate, rarely slightly dentate.

Sub-sp. *pratense* has the following varieties, sub-varieties, and forms:—

Var. *purpureum* Hartm. differs from the plant of British authorities in the narrower leaves, sub simple habit, and in the corolla being purple (not white or variegated) before flowering. It is recorded only for Sweden and Norway. Var. *maculatum* Behm has spotted stem and leaves, Sweden. Var. *purpurascens* Ascherson, N. Germany and Russia. Var. *fragrans* Behm, corolla small, yellow with purple striae, Sweden. Var. *alpestre* Beauv. with its sub-var. *tenerum* Dahl., Norway, and sub-var. SCOTIANUM Beauv. This is the *purpureum* from Glen Eunach 720 m., *A. Wilson.* It is also the "var. *purpureo* of Hooker *Hibernia* 1816" in *Hb. DC.* and the one gathered in "mt. bogs, Mangerton, Kerry, 1844." Stem slender, simple or slightly branched, about 10 cm. high: the lower internodes short, about 10 mm.; cauline leaves rather thick, scabrous on both sides, 15—35 by 2—3 mm. broad: bracts ovate-lanceolate, broader than the leaves, the lower entire, the apical distinctly shorter and more or less dentately cut at base; corolla at flowering small (10 mm.), yellow, with white lower lips rose-striate, after flowering blackish-purple. The inflorescence begins at the third or fourth, rarely at the second node (in *purpureum* from the third to the fifth). Type sub-var. *alpestre* occurs in Austria, Switzerland, and Italy. Sub-var. *sabaudum* Beauv. is limited to the Alps of Annecy. Sub-var. *rhodanicum* Beauv., Switzerland. Var. TYPICUM (*M. pratense* sensu stricto), sub-var. *brachycladum* Beauv. Vosges. Sub-var. FOLIATUM Neum. Plant rather strong, 25 cm. high; stem (diam. 1½ mm.) glabrous at base, with short bent brownish hairs towards the top; branches oblique, erect, longly naked at the base, the top bearing leaves and flowers at the apex; cotyledons (about 30 by 7 mm.) present during flowering; cauline leaves remote (internodes 40 mm.), ovate-lanceolate, about 50 by 5 mm., erect-spreading; no intercalary leaves; lower bracts entire, about 40 by 7 mm.; upper cuneate-sub-hastate at base; inflorescence beginning at second or third, rarely at the fourth node; calyx-tube short (2 mm.) with arcuate-filiform teeth; corolla about 13 mm. long, open, white or yellow, after flowering pale purple. Clogher Valley, Tyrone, 1907, *C. L. Peck*; Middlehath Wood, Graffham, Sussex, *C. C. Lacaita*, as a new form—*laxum* Beauv., with a pale yellow corolla which becomes purple after flowering. Sub-var. *quercetorum* Beauv., Germany, Sweden, Switzerland, France. This has intercalary leaves and smaller cotyledons (15 by 5 mm.) and might be found in Britain. Var. PALUDOSUM Gaud., sub-var. EU-PALUDOSUM Beauv. Inch Garth, M. Perth, shown me by *D. Haggart*; see also *Rep. B.E.C.* 487, 1913, *Marshall* and *Shoolbred*: Wybonbury, Cheshire, n. 1960, August 1906, *G. C. Druce.* Rigid, erect, slightly branched; stem about 23 cm. high, the erect branches sterile or sparsely flowering; intercalary leaves 0—2 entire, erect: cauline leaves and bracts linear-lanceolate, about 54 by 2 mm.: corolla whitish, about 12 mm. long (not cm.), bearing a ring of hairs round the base of both the superior filaments; smaller cotyledons, about 18 by 3 mm., absent or dry at flowering. This also occurs in France, Switzerland, and Austria. Sub-var. *platyphyllum* Beauv. and sub var. *neocomense* Beauv., Switzerland. Var. *elongatum* Beauv., France. Var. *rhaeticum* Beauv., Switzerland. Sub-var. *abyssale* Beauv. and sub-var. *culminale* Beauv., both Switzerland. Var. *castanetorum* Murr, Austria, Switzerland, and Italy. Var. *thinobia* Beauv., France.

Var. MONTANUM Johnston. Johnston's name should be in brackets. He described it as *M. montanum* sp. nov., in the *Flora of Berwick-on-Tweed*. Beauverd's contrasting descriptions of *montanum* and *ericetorum* are as follows:—MONTANUM. Caulis nanus ± 8 cm. altus,—subnudus vel parum ramosus, ramis brevibus (± 4 cm. lg.)—oblique erectis: folia intercalaria (2—4 paria) auguste elliptico-lanceolata (superf. ± 20 by 1½ mm.) inflorescentiae initium ad 6—8 um. nodum situm (area britannica). Altnaharra, Suth. W. *Miller* 1889; Gran Wood, *C. E. Palmer*: Dunbeag Bog, Co. Clare, 1882, *B. King*: also since publication of *Mon.* Lawers, M. Perth: Glen Dole, Forfar. ERICETORUM. Caulis (± 15 cm. altus) medio ramosus, ramis elongatis (± 15 cm. lg.) flexuosis horizontaliter patulis; folia intercalaria (0—2 paria) elliptico-lanceolata (± 35 by 4 mm.) inflorescentiae initium ad 5—7 um. nodum situm. Aberglaslyn, Carnarvonshire, 1851, *C. E. Palmer*: Hook Common, N. Hants., 1890, *C. E. Palmer*: near Richmond, York, *Ward*: Teallach and Braemore, W. Ross, *Druce*: Wybonbury Bog, Cheshire, *Marshall* and *Wolley-Dod*: Lough Derg, *Lomax*: Roundstone, *B. King*: Galway: Disserth, Radnor, 1899, *W. H. Painter*: Birch Copse [? Berks.], 1858, *Holliday*: Dunbeath, Caithness, 1888, *W. R. Linton*: Leith Hill, Surrey, 800 ft., No. 49555c, *C. B. Clarke*: Huddersfield, York (in quercetis), 1911, *C. Schroeter*: and now recently, Bellside, Lanark: Downton, Hereford.

Sub-sp. VULGATUM (Pers.) emend. Beauverd. Under this there is var. *oligocladum* Beauv., which has a wide continental area, but is not as yet reported from Britain, with a sub-var. *pinetorum* Beauv. and sub-var. *rigidum* Beauv., both from Switzerland—the latter from near Lugano. Sub-var. *mesophyllum* Beauv. with *ovatum* and *nanum*, Belgium, France, Switzerland, and Italy. Sub-var. *platyphyllum* Beauv., Belgium, Hungary, and Switzerland. Sub-var. *acuminatum* Beauv., Scandinavia. Var. *vallesiacum* Beauv., Switzerland, with f. *elongatum.*

Var. BRITANNICUM Beauv. This has a brittle stem about 20 cm. high; axillary branches flexuous, arcuate, spreading, sterile or bearing a few flowers; stem leaves usually 50 by 5 up to 60 by 19 mm., absent after flowering; inflorescence from the third or fourth node; calyx ± 6 mm. long with falcate-filiform teeth; corolla pale yellow, soon turning blackish, about 12 mm. long. New Forest, Brockenhurst, S. Hants, 1887, No. 1074, *C. E. Palmer*; "Higachan pr. Killarney, 1910, Druce." [Probably Sligachan, Isle of Skye.]

Var. COMMUTATUM Beck. (*M. vulgatum* Dorfler Herb. Norm. 4749 non. Pers.) This is characterised by the inflorescence starting from the fourth to the twelfth node. In *britannicum* it starts from the second to the fourth. Sub-var. *paradoxum* Beauv. (*M. paradoxum* Rönniger) et f. *paludosum* etc., Austria, Switzerland, Italy, France. Sub-var. *pseudo-nemorosum* Beauv., Austria, Switzerland, Italy.

Sub-var. CONCOLOR (Schönheit). This is *M. commutatum* Tausch in the restricted sense. It has 3—5 pairs of intercalary ovate-lanceolate leaves, and the lower bracts are deeply pectinately cut. Bagley Wood, Berks., *Baxter*; Killarney, *C. Schroeter.* The corolla is greenish-white, about 14 mm., with the upper part spotted with black and yellow or citron-yellow, soon turning black. Its range extends into France, Italy, Austria, and Hungary. Var. *congestum* Beauv., Alsace.

Var. VULGATUM (Pers.) Beck., sub-var. *eburneum* Beauv., Switzerland. Sub-var. *hastatum* Beauv., France, Switzerland, Austria, Russia. Sub-var. BREVIDENTATUM Beauv., France; and I have since had it from Tarbert, Argyll. Sub-var. *monticolum* Beauv., Austria, Switzerland, Italy, France. Sub-var. *calidorum* Beauv., ff. *robustum* and *elongatum* Switzerland; f. *transiens* Beauv., Austria; f. *fallax* Beauv., Switzerland, Italy.

Sub-var. LAURIFOLIUM Beauv. (*M. pratense*, var. *latifolium* auct. Brit. non Schueb. & Mart.) Stem strong, 2 mm. diam., about 40 cm. high, branched from the base with elongate, arcuate-erect, simple or slightly compound branches; cauline leaves ovate-lanceolate (80—110 by 15—22 mm.), erect, remote, with rarely a pair of intercalary leaves; lower bracts entire (69—90 by 14—20 mm.), more or less narrowed at base, apex acuminate, the others sub-entire or more or less dentate or pectinate digitate at the base; narrowed into a short petiole; more or less floriferous, the inflorescence from the fourth to the sixth node; calyx 7 mm., including the teeth, which are 4½ mm. long; corolla 14 mm., sulphur-white, the top somewhat open. Wootton-under-Edge, Gloucester, 1900; Oaresbury, Berks., 1891: Brickhill, Bucks., 1881; Rotherfield, etc., Oxon., 1883; Woburn, Beds, all *Druce*; Brecon, 1882, *Feyer*. Sub-var. *digitatum* Beauv., f. *laciniatum* Beauv., Russia, Switzerland, France: f. *murorum* Beauv., Ticino.

Sub-var. DIGITATUM, f. OVATUM (Spenner as var.) Beauv. (*M. pratense*, var. *latifolium* Schueb. & Mart. p.p.), Weir Head, S. Devon: Wynd Cliff, Monmouth; Glendalough, Wicklow (not Mecklom), all *Druce*. M. Beauverd has since determined sub-var. DIGITATUM—my plant from Wood Perry, Oxon., 1916. It verges towards *laurifolium*. *Latifolium* differs from *laurifolium*, which has its area in Britain, in its much shorter leaves (50 by 20.5, against 110 by 20 mm.) and in its eu-asiatic distribution—Belgium, Germany, Switzerland, France, Serbia, Spain.

F. LANCEOLATUM Spenner (*M. pratense*, var. *angustifolium* Lange. *M. nemorosum*, var. *angustifolium* Caruel). Herba vulgatissima. Cauline leaves narrow lanceolate, 40 by 5.8 mm. Widely distributed in Europe. In Britain—Holten wood, Bath (? Holten wood, Oxon.), 1890, *Druce*; Alverstone, Isle of Wight, *C. E. Palmer*; Dunbeath, Caithness, *Linton*. F. *extremum* Westerl., Sweden. F. *divaricatum* Kerner (*M. pratense*, var. *aureum* Norman), Sweden.

Var. HIANS Druce, f. STENOPHYLLUM Beauv. Polycladous rarely oligocladous: about 20 cm. high: stem (1 mm. thick) flexuous, glabrous below, slightly goniotrichous above; cotyledons about 20 by 5 mm., disappearing before flowering: cauline leaves 1—3 pairs, more or less distant (internodes 20—35 mm.), ovate-lanceolate (about 35—70 by 3—14 mm.), glabrous on both surfaces: branching from the base; the branches elongate, flagelliform, flowering and leafy at the top; the intercalary leaves (0—2 pairs) similar to those of the stem; lower bracts entire, ovate lanceolate (30—70 by 3—16 mm.), shortly stalked; the upper (5—10 pairs) cuneate at base, more or less toothed or sub-entire; inflorescence from the fourth to the seventh node; calyx tube short with arcuate-setiform teeth; corolla golden-yellow, the mouth open, about 15 mm. long. The form STENOPHYLLUM has the inflorescence from the fifth to sixth node; the intercalary leaves (1—2 pairs) about 40 by 3 mm. M. Beauverd thus names my specimens from Glen Dole, Forfar, 1843, *Gardiner*; near Moffat and Millaw Burn, Dumfries, *Druce*; Bridge of Brown, 1905, *Marshall*; near Betty Hill, *Shoolbred*; Findhorn, Nairn, 1887; Beauly, Easterness, 1889; Pandy Mill, Carnarvon, 1909; Boughrood, Radnor, 1908; Aber, Llanberris; Penmaenmawr, Carnarvon, *Loydell*: Keswick, Cumberland; Templemore, Co. Down; Killarney, Kerry [not Kelly], all *Druce*; Ashopton, Derby, *Linton* (see *Rep. B.E.C.* 1893); Derwent Dale, *Painter*. To these may be added the classic station Glen Cree, Wigton; Boat of Garten, Easterness; Blairgowrie, E. Perth; Kirkcudbright; Lake Lancashire (*Pearsall*)!: Arthog, Merioneth (*Barton*)!; Ambleside, Westmoreland; Somerset, N.; Beddgelert, Carnarvon.

F. PLATYPHYLLUM Beauv. differs in the less branched stronger stem—2 mm. broad; stem leaves ovate-lanceolate (50—70 by 10—14 mm.); intercalary leaves one pair or none, broadly lanceolate; upper bracts conspicuously toothed or pectinate-lanceolate; inflorescence from the fourth to fifth node. This is the southern and western analogue of the previous form. It occurs at Weir Bridge, S. Devon, 1895; Watersmeet, N. Devon, 1896; Winch Bridge, York, 1909; Glendalough, Co. Wicklow, 1901; Glengariff, Co. Cork, 1890; Glenariff, Co. Antrim, all *Druce*; also from Killarney, 1911, *C. Schroeter* in *Herb. Polytechnic Zurich*. Recently I have gathered it at Millook, Cornwall. Var. *chrysanthum* Beauv. and ff. *stenophyllum*, *dubium* and *latifolium*, Switzerland, Italy. Var. *sibiricum* Beauv., Siberia.

Var. INTEGERRIMUM Doell (*M. pratense*, sub-sp. *hians*, var. *vogesiacum* Beauv.), f. PSEUDOSILVATICUM Beauv. (*M. pseudosilvaticum* Schur). A polymorphous plant. The form has much the aspect of *silvaticum*, having the intercalary leaves (1—3 pairs) narrow, 35 by 4 mm., and the upper bracts entire or very slightly subdentate at base; Wassails Copse, Odiham, N. Hants., *C. E. Palmer*: Burnham Beeches, Bucks., *Loydell*. F. *vogesiacum* Beauv., Germany, Austria, France, Switzerland. Var. *linifolium* Rönniger, Germany, Switzerland.

This notice has been drawn up under difficulties. All my specimens of the *pratense* group prior to 1914 were sent to M. Beauverd, and in consequence of the war he has been unable to return them.

The identification, therefore, of some of the localities cited is somewhat conjectural, and I had no opportunity of checking the spelling of place-names. With regard to the forma *platyphyllum* of var. *hians*, it is probable that if M. Beauverd could have seen living examples in situ he might have given it a higher grade, to which Dr Schroeter, to whom I showed it at Killarney, thought it was entitled. See also *New Phyt.* and *Rep. B.E.C.* 362, 1915.

1961. M. SYLVATICUM L. This M. Beauverd divides into three subspecies. *M. Gainieri* Beauv., France: *M. saxosum* (Baumg.) Beauv., and *M. eu-silvaticum* Beauv. The latter has two vars. and two sub-vars. from Hungary and Bulgaria *M. eu-silvaticum* is divided into the pale and dark yellow forms. Those with the pale corolla are: var. *tricolor* Beauv., sub-var. *abietinorum* Beauv., and *cembrarum* Beauv., Switzerland: sub-var. *roseum*, Switzerland, Austria: var. *albidum* Beauv., Sweden, Austria: var. *bicolor* Behm, Sweden: var. *pallens*, Austria: var. *ochroleucum* Beauv., Switzerland: var. *angustissimum* Schur, Hungary. The darker yellow forms are: var. *nanum* Beauv., Austria, France; var. *decumbens* Westerl., Sweden, Switzerland; var. *dentatum* Schur and sub-var. *laricetorum* Beauv., Germany; f. *macrodontum*, f. *obscurum*, and f. *typicum* Westerl., Germany, Sweden, Switzerland, Hungary, Italy, France: f. *reflexum* Schur, sub-var. *intermedium* Beauv., Sweden: f. *sinuatum*, Switzerland: f. *subdentatum*, Sweden, Germany, Austria, Switzerland; var. *edentatum* Schur, sub-var. *gracillimum* and f. *maritimum*, Switzerland, Italy, France: f. *norvegicum*, Scandinavia, Russia: f. *montanum*, Germany, Switzerland, Italy, France; sub-vars. *latifolium* Hartm., *angustifolium*, NEPHELOBIUM, *turfosum*, *genuinum*, *vulgatum*, *dubium*. No British localities are cited for any of the varieties or subordinate forms except in the case of the var. EDENTATUM, sub-var. NEPHELOBIUM. This is my plant from Coshieville and Lawers, M. Perth.

In a tabular form the British species of Melampyrum therefore stand as:—

Gen. 463. MELAMPYRUM (Tourn.) L.

1958. M. CRISTATUM L., Ang. 11.

1959. M. ARVENSE L., Ang. 9 (1), sub-var. *Schinzii* Beauv.

1960. M. PRATENSE L., 109, H. 39, sub-sp. *pratense* [var. *alpestre* Beauv.], sub-var. *scotianum* Beauv. (var. *purpureum* auct. ang.). Scot. 2, Kerry.

[Var. *typicum* Beauv.], sub-var. *foliatum* Neum., Tyrone; f. *laxum* Beauv., Sussex.

Var. *paludosum* (Gaud.), sub-var. *eu-paludosum* Beauv., Cheshire, M. Perth.

Var. *montanum* Johnst. 15, H. 1.

Var. *ericetorum* D. Oliv., 10, H. 2.

Sub-sp. *vulgatum* (Pers.) em. Beauv., var. *britannicum* Beauv., Hants., Skye.

[Var. *commutatum* Beck.], sub-var. *concolor* (Schönheit) Beauv., Berks., Kerry.

[Var. *vulgatum* Beck.], sub-var. *laurifolium* Beauv. (*latifolium* auct. ang.), Ang. 6.

[Sub-var. *digitatum* Schur], f. *ovatum* (Spenner) Beauv., Ang. 2, H. 1; f. *lanceolatum* Spenn., 3.

Var. *hians* Druce, f. *stenophyllum* Beauv., 17, H. 2; f. *platyphyllum* Beauv., 2, H. 4.

[Var. *integerrimum* Doell], f. *pseudosilvaticum* Beauv., Ang. 2.

1961. M. SYLVATICUM L. Brit. bor. 21, H. 2 (1).

Var. *pallidiflorum* F. B. White, Scot.

Var. *edentatum* Beauv., sub-var. *nephelobium* Beauv., Scot. 2.

2026. SALVIA VERBENACA L., a large flowered form. Between Shoreham and Hove, Sussex, 1917, Miss TODD. An entirely different plant from *S. Marquandi* so that the length of the corolla tube is not necessarily correlated with other characters.

2044. PRUNELLA VULGARIS L., var. DUNENSIS mihi. Plants small, 3—4 cm., with arched lower branches; leaves with a few blunt teeth or sub-entire, thinly clothed, as is the stem, with strong white hairs; inflorescence in short compact heads, 1—1.5 cm., the bracts large and fringed with white hairs. In the slacks of sand-dunes at Pembrey, Carmarthen, and at Whiteford Point, Glamorgan, July 1916, G. C. DRUCE.

2050 (2). MARRUBIUM PEREGRINUM L. Alien, S. Europe. Chicken run near Woodhall Spa, Lincoln, 1917, Rev. E. A. WOODRUFFE-PEACOCK and Rev. F. ALSTON.

2060. STACHYS OFFICINALIS Trevis, lusus PELORIA Druce. A fine peloric form with the terminal florets perfectly regular and campanulate. Gibside Wood, Durham, J. HESLOP-HARRISON in *Vasculum* 95, 1917.

2065. LEONURUS CARDIACA L., var. HIRSUTUS Hornem. Suppl 66. Leaves for the greater part trifid, more rugose and more softly hairy than the type; calyces softly hairy and less strongly spinescent. Chicken run, Tower-le-Moor, Lincoln, Revs. F. ALSTON and E. A. WOODRUFFE PEACOCK; Didcot, Berks., and waste ground, Oxford, G. C. DRUCE.

2077. BALLOTA NIGRA L., var. MOLLISSIMA Druce. Mitcheldean, Hereford, Miss TODD; Llenford, Monmouth, DRUCE. Foliis tenuibus, magnis, molliter pubescentibus, calyci pilis albis longissimis copiose hirsuto. This differs from *membranacea* in the soft pubescence of the leaves and the densely long white hairs of the calyx. In *membranacea*, which has the same thin large leaves, the pubescence is much sparser and shorter.

2079. TEUCRIUM SCORODONIA L., var. CRISPUM. Devonshire, F. W. STANSFIELD. This has been in cultivation for 50 years and still retains the curious crisped margin to the leaves. The plants are under experimental culture by Miss Rayner at the University College, Reading.

2091. PLANTAGO MARITIMA L., sub-var. BRACTEATA, comb. nov. Leaves broad, slightly toothed; lower flowers of the inflorescence strongly bracteate; bracts gradually diminishing in size (the lowest 10—15 mm. long) upwards. Polperro, Cornwall, 1916, F. RILSTONE. This is a lusus rather than a variety.

2091. P. MARITIMA L., var. LEPTOPHYLLA Mert. & Koch Deutsch. Fl. i., 808. Cape Grosnez, Jersey, August 6, 1832, J. GAY MS., in *Bibl. Kew.*

2111 (2). AMARANTHUS ANGUSTIFOLIUS L., var. GRAECIZANS (L.) Thell. in Asch. & Graeb. Syn. v., 306, 1914. *A. graecizans* L., *A. Blitum* (not of L.) Th. Dyer Fl Trop. Afr. & Fl. Cap. Alien, Asia, occ., Africa. Tweedside, Selkirk, 1913, Miss I. M. HAYWARD; ash-heap, Aldrington, W. Sussex, 1911, T. HILTON. Det. A. THELLUNG.

2116 (7). A. PANICULATUS L. Alien, tropical and semi-tropical areas. Cult. fields, Gorey, Jersey, 1900, S. GUITON. This is placed under *A. hybridus* L. by Thellung in his erudite Monograph in Asch. & Graeb. *Syn.*, *l.c.*

2116 (8). A. QUITENSIS Humb. Bonpl. & Kunth Nov. Gen. et Sp. ii., 194 [156], 1817. Alien, S. America, Argentine, etc. West Drayton, Middlesex, 1916, Miss COBBE; Malvern, Worcester, DRUCE.

2124. CHENOPODIUM ALBUM L. Under the group ALBA Dr Standley in the North American Flora xxi., i., 11, 1916, has made a key of the allied species as follows:—

- Blades of the lower leaves about as broad as long.
  - Young leaves and inflorescence bright red; plants 1-3 metres high, stout..*C. amaranticolor*
  - Plants bluish-green, never red, 3-10 dm. high, usually slender...C. VIRIDE L. (*opulifolium* Schrad.)
- Blades of all the leaves conspicuously longer than broad, often twice as long or longer.
  - Calyx open, exposing the fruit..*C. ferulatum*
  - Calyx closely enclosing the fruit.
    - Plants coarsely and loosely farinose yellowish; seed coarsely punctate..*C. dacoticum*
    - Plants very finely and closely farinose; seed finely puncticulate or smooth.
      - Seed dull; blades of leaves conspicuously hastate.........*C. petiolare*
      - Seed shining.
        - Leaf-blades, all except the lowest, entire, lanceolate or oblong-lanceolate, bright green.....C. LANCEOLATUM (*album*, var. *integerrimum*)
        - Leaf-blades nearly all dentate or lobed, broader than lanceolate.
          - Seed 1·3-2 mm. broad; plants not ill-scented.
            - Plants bright green; inflorescence usually loose and open..................................C. PAGANUM
            - Plants copiously farinose; inflorescence usually dense..C. ALBUM
          - Seed 0·8-1 mm. broad; plants usually ill-scented.
            - Leaf-blades conspicuously three-lobed, the upper hastate; plants stout, yellowish. C. HIRCINUM
            - Leaf-blades dentate, never three-lobed; plants slender, never yellowish....C. BERLANDIERI

The plants of this section which have been found in Britain are printed in capitals, and as some of them are of frequent occurrence on waste ground, remount areas, etc., it was thought that this key might be useful, especially as in the most recent British Flora they are either not included or inadequately described. It will be noted that Dr Standley makes *opulifolium* Schrad. = *viride* L.

2130 (3). CHENOPODIUM PANICULATUM Hook. in Bot. Misc. ii., 237, 1831. Alien, S. America - Peru, etc. Woollen mill. Selkirk, 1916, Miss I. M. HAYWARD, teste A. THELLUNG. Probably this from Pye Hall Farm, Suffolk, E., 1917, A. R. HORWOOD.

2151 (3). ATRIPLEX MUELLERI Benth. Fl Austr. v., 175. Alien. Plants probably belonging here were found at Bradford, York, in 1917, by J. CRYER.

Gen. 510 (3). BASSIA All. Misc. Taur. iii., 177, t. 4, 1766 (not of L. Mant. 1771). *Chenolea* Thunb. Nov. Gen. 10, 1781, I.K.

2153 (20). B. QUINQUECUSPIS F. v. Muell. Census 30. *Anisacantha quinquecuspis* F. v Muell. Trans. Vict. Inst. 134. 1855. *A. muricata* Moq. Chenopod. 84, I.K. *Chenolea quinquecuspis* F. v. Muell. Fragm. x., 91. Alien, Australia—N.S. Wales, Queensland. Between Galashiels and Melrose, Roxburghshire, 1913, Miss I M. HAYWARD, teste A. THELLUNG

2161 (2). SALICORNIA GRACILLIMA × RAMOSISSIMA. Brading Harbour, Isle of Wight, September 8, 1916, W. C. BARTON.

2161 (3). S. DISARTICULATA × PROSTRATA, var. APPRESSA. Newtown, Isle of Wight, September 1916, W. C. BARTON.

S. DISARTICULATA × RAMOSISSIMA. Newtown, Isle of Wight, September 1916, W. C. BARTON in *lit.*

S. DISARTICULATA × (DISARTICULATA × RAMOSISSIMA) with above, W. C. Barton. All these determined by Dr E. J. SALISBURY.

2168 (2). SALSOLA PESTIFER A. Nelson, Coult. & Nels. Man. 169, 1909. *S. Tragus* Reichb. Fl. Germ. Exc. 583, 1832 (not of L.). *S. Kali*, var. *tenuifolia* Tausch in Flora xi., 326, 1828. *S. Kali*, var. *pseudotragus* Beck in Reichb. Ic. Fl. Germ. xxiv., 172, 1909. Alien, Medit. region, Western Asia, Russia, central and south. Completely naturalised in N. America. Wrentham, Suffolk, 1917, A. R. HORWOOD.

Ord. 72 (2). PHYTOLACCACEAE Lindl. Nat. Syst. 210, 1836.
Gen. 515 (10). PHYTOLACCA L.

2168 (30). P. DECANDRA L. Of American origin, now quite naturalised in Europe. Alien, waste ground, Bradford, York, M.W., J. CRYER, vide sp.

2183. POLYGONUM PATULUM M. Bieb. *P. Bellardi* auct., non All. Port Talbot, Glamorgan, 1904, G. C. DRUCE; N. Wales, 1917, A. DALLMAN.

2186 (2). P. POLYSTACHIUM Wallich Cat. n. 1686. Alien, India. Hortal. Near Lynton, N. Devon, 1917, Miss COBBE. From a little hollow in a sand pit near the golf links at Woodhall Spa, Lincoln, Rev. F. ALSTON. A very large plant which looks as if it had been established for some years. This is a very ornamental and freely growing species which, like *cuspidatum*, may become naturalised. Planted at Welbeck, Notts., R. W. GOULDING.

Gen. 536 (2). HELXINE Req. in Ann. Sc. Nat. ser. I., v., 384, 1825.

2253 (5). H. SOLEIROLII Req., *l.c.* Alien, Corsica, Sardinia. Hortal. St. Just in Roseland, Cornwall, May 1917, Miss COBBE.

2261. QUERCUS ROBUR L., var. CRISTATA Henry in Gard. Chron. 34, 1917, fig. 13. Lusus insignis, foliis parvis, contortis, obliquis, glandibus-glabris, apice depressis. Cluster Oak. Savernake Forest, Wilts. The acorns are quite glabrous and have a flattened apex with a depression containing the remains of the styles. The leaves, much smaller than those of the type, are clustered together, owing to the abbreviated growth of the shoot. They are twisted and very oblique, the midrib dividing the blade into unequal parts. This seems to be a very interesting teratological condition—a lusus rather than a true variety. A. HENRY.

2313. CEPHALANTHERA DAMASONIUM Druce (GRANDIFLORA). A narrow-leaved form has been sent by Mr J. EDWARDS from Colesborne, Gloucester. It flowers a full fortnight before the ordinary broad-leaved form, and has, he says, a different habit.

2326. ORCHIS INCARNATA L., var. PULCHELLA Druce. (For details of this and the following Orchids see Supplement). Lyndhurst, Teesdale, Sutherland, 2326 (2). O. PRAETERMISSA Druce, lusus ECALCARATA mihi. Pudmore, Surrey, J. C. E. BOYS. Lusus *reversa* mihi. Charlbury, Oxford. Sub-var. *albiflora* mihi. Abingdon, Berks., G. C. DRUCE.

2327. O. MACULATA L., sub-var. LEUCANTHA mihi. Longmer, Salop: Tregaron, Cardigan, T. N. STEPHENSON; Wool, Dorset; Tackley, Oxon.: Ballyvaughan, Co. Clare. O'KELLY.

O. maculata × *foliosa* = × *O. scampstoni* mihi. This shows the natural hybrid. It occurred spontaneously at Scampston Park, York, and was sent me by Mr W. H. ST. QUINTIN.

O. maculata × *Habenaria Gymnadenia*. Tregaron, Cardigan, T. N. STEPHENSON; Birkenhead, Cheshire, 1917, E. F. PAYNE.

2327 (2). O. FUCHSII × H. GYMNADENIA Fermoy, Cork, 1916, T. H. LEACH.

Sub var. *albiflora* mihi. Wool, Dorset.

2338. HABENARIA GYMNADENIA Druce, var. BOREALIS Druce. Borrowdale, Cumberland, G. C. DRUCE.

Var. *bicolor* et *spiralis* (Heslop-Harrison in Vasculum 8, 1917). Durham.

2349. IRIS PSEUDACORUS L., sub var. AURANTIACA. Flowers deep orange. In great plenty near Oxwich, Glamorgan, July 1917, Miss VACHELL.

2416 (3). LILIUM CANADENSE L. Alien, N. America. One plant far from houses in Tilgate Forest, Sussex, July 1917, Mr STEPHENS, ex A. WEBSTER, vide sp.

2429 (2). JUNCUS VAGINATUS R. Brown Prod. Nov. Holl. 218, 1810. *J. pallidus* R. Br., *l.c.* Alien, Australia. Tweedside, Selkirk, 1916, Miss I. M. HAYWARD.

2440. J. GERARDI Lois., var. SORANTHUS (Trautv. Bull. Bot. Soc. Mosc. xl., 3, 110, 1867). *J. soranthus* Schrank. Wyke Regis, Dorset; Anglesey, J. GRIFFITHS; Islay, Inner Hebrides. See A. BENNETT in *Rep. Wats. Exch. Club* 35, 1916-17. Buchenau describes it "flores turmatim, approximati, pallidiores (ferruginei vel straminei)." Engl. *Pflanz.* iv., 36, 112.

2448. J. URUGUENSIS Griseb. in Guett. Abh. xxiv., 317, 1870. Alien, Argentina. Tweedside, between Galashiels and Melrose, Roxburghshire, 1915, Miss I. M. HAYWARD. Det. (with reservation) A. THELLUNG.

2527. CYPERUS DECLINATUS Moench Meth. 317, 1794. *C. vegetus* Willd. Sp. Pl. i., 283, I.K. Alien, Chile. Border of Batchmore Lake, Rickmansworth, Herts., 1914, G. C. MACONCHY.

2614. CAREX MURICATA L., var. FUMOSA Grenier Fl. Jurass. 835. Husnot Cyperac. 18. Race *C. fumosa* Rouy Fl. Fr. xiii., 412. Spikelets in a compact head, glumes blackish, fruits black and shining. Near Didcot, Berks.; Wansford, Northants., G. C. DRUCE.

Var. REMOTA F. Schultz (name suggested by Rev. E. S. Marshall). Asthully, Oxon., July 1917, G. C. DRUCE.

Gen. 634 (10). ELEUSINE Gaertn. Fruct. i., 7, t. 1, 1788.

2631 (20). E. INDICA Gaertn. i., 8, 1788. Alien, tropical and sub-tropical areas. On ballast at Liverpool, 1872, J. HARBORD LEWIS; Meanwood, Leeds, 1916, E. C. HORRELL; Galashiels, Selkirk, 1916, Miss I. M. HAYWARD.

2656 (2). PHALARIS LEMMONI Vasey Ill. N. Amer. Grasses ii., t. 5, 1892. Alien, America—California, Arizona. Near Thetford, Norfolk, introduced with forage, 1916, F. ROBINSON.

2662. ALOPECURUS PRATENSIS L., var. In a pond near the Sewage Works, Galashiels, Selkirk, September 1916, Miss I. M. HAYWARD. An extraordinarily robust plant, with broad glaucous leaves, resembling those of *Elymus arenarius*. The flowers, however, are normal. The condition may have been induced by the strong nitrogenous mud in which it grew. In stature and coarseness it resembles *A. antarcticus*. G. C. DRUCE.

2673. PHLEUM PRATENSE, var. INTERMEDIUM (Jord.) F. Schultz Arch. Fl. Fr. et All. 325 as a species. *P. pratense*, race *P. nodosum*, var. *intermedium* Rouy Fl. Fr. xiv., 50. This chiefly differs from *nodosum* in being a more robust plant, 3-7 dem., with the stem not much bent below, in the inflorescence, 8-10 cm. (other vars. 2-4 cm. only). This is the plant which Mr Chester sent to the Club in 1916 (see *Rep. B.E.C.* 593, 1916). This year I have seen the same robust plant at Nuffield, Oxon., and near Wilston, Wilts. Mr H. J. Goddard has also sent some for distribution from the vicinity of Salisbury. It has the swollen stem base of *P. nodosum.*

Var. LONGIARISTATUM Parnell Brit. Grasses 176, 1845. Root bulbous, awns nearly as long as glumes. Moist shady places, Roslyn Wood, etc., Midlothian, Parnell, *l.c.* As the author says, this variety occasionally occurs with a very short spike, in which case it closely resembles *P. alpinum.*

Var. ARMATUM, var. nov. Differs from type in the long awn (as long as the glume), and the usually shorter inflorescence. Parnell describes his var. as having a bulbous root, and thus var. *nodosum* L. But we have the same long-glumed form occurring in fibrous-rooted plants, as at Galafoot, Selkirk, Miss I. M. HAYWARD and G. C. DRUCE; Alyth, Mid Perth, M'T. COWAN: Slough, Bucks., 1900 (a short inflorescenced plant): Port Talbot, Glamorgan, 1904, G. C. DRUCE.

2697. DEYEUXIA NEGLECTA Kunth, var. BOREALIS (Laestad.) Druce in *Rep. B.E.C.* 238, 1888. One of the most important discoveries of 1917 is that of the above arctic grass by Mr JAMES FRASER. It was originally found by me close to Killin Pier, Mid Perth, in 1888, and is one of our most northern grasses, being recorded from Finmark, Finland, West Bothnia and Greenland. It was still at Killin in 1891. After the hurricane, however, sawmills were erected for the cutting up of the uprooted pines. The sawdust from these mills gradually filled up the marsh, and in a few years the plant was destroyed. It seemed curious that no other marsh in the neighbourhood should yield it. Searches round the western end of Loch Tay on several occasions proved fruitless. There were good hopes that the somewhat extensive marshes between Killin and Crianlarich, part of which I vainly explored in 1916, might afford it a home. It was, however, reserved for Mr Fraser (who has kindly sent specimens for distribution) to discover it within a mile of its original station in 1917, so that this very rare and interesting grass is once more to be restored to the Scottish flora. The Vienna Actes seem to demand the name *Deyeuxia neglecta*, var. *elatior* (Hartm.) comb. nov., since it was first described as a variety by Hartman, under that name in Anders. Skand. Vaxt. ii., 95. Nyman places it as a sub-species *borealis* under *neglecta.* G. C. DRUCE.

2735 (4). DANTHONIA PILOSA R. Br. Prod. 177, 1810. Alien, Australia. Lanal. Selkirk, 1917, Miss I. M. HAYWARD.

2735 (5). D. NUDA Hook. f. Fl. Nov. Zel. ii., 337. Alien, New Zealand. Lanal. Selkirk, 1917, Miss I. M. HAYWARD.

Gen. 679 (5). DISSANTHELIUM Trin. in Linnaea, x., 305, 1836.

2744 (10). D. SUPINUM Trinius, *l.c.* Alien, Chile, Bolivia, Peru, Mexico. Galashiels, Selkirk, 1916, Miss I. M. HAYWARD. Det. Professor HACKEL through Dr A. THELLUNG.

2748 (6). ERAGROSTIS CAPILLARIS Nees Agrost. Bras. 505. Alien, N. America, West Indies. On canal bank, Aintree, Lancs., 1914. J. A. WHELDON.

2759. POA PRATENSIS L., var. e. PLANICULMIS Parnell Grasses 74, 1845. Stem stout, compressed; leaves short, broad, upper leaf folded, compressed, with the summit rounded behind; panicle erect; spikelets large; lowermost branches smooth and mostly in pairs; whole plant dark green. Common by roadsides. Var. *umbrosa* Parnell, *l.c.* Tall, slender; panicle somewhat drooping; branches rough, lower ones generally in fives; leaves long, narrow; whole plant light pleasant green. Shady places (often mistaken for *P. nemoralis*). Var. i. *arida* Parnell, *l.c.* About a foot high; panicle somewhat drooping; stem sheathed nearly to the summit, with the upper leaf passing behind the panicle; whole plant soon assuming a bleached appearance. Common in dry exposed places. Var. j. *retroflexa* Parnell, *l.c.* A small slender plant, with the lower branches of the panicle suddenly bent downwards. Frequent in pastures under shady trees. Occasionally mistaken for *Poa distans*. Var. k. *muralis* Parnell, *l c.* Slender; 5-8 inches high, with short upright panicle. Frequent on wall-tops in shady places. Var. l. *arenaria* Parnell, *l.c.* Stout, upright, with large somewhat angular spikelets; outer palea 7-ribbed, inner palea frequently divided to base; whole plant somewhat glaucous. Sandy places on sea coast.

2761 *g*. P. TRIVIALIS L., var. RIGIDIOR Fl. Ingr. 760, 1861. Hungerford, Berks., July 1892; near Chatteris, Cambridge. G. C. DRUCE.

2776. GLYCERIA MARITIMA Wahl. Fl. Gothob. 17, 1820. *Poa maritima* Hudson Fl. Angl. 35, 1762. *Schlerochloa maritima* Lindl. Syn. 315, 1829. *Puccianellia maritima* Parl. Fl. Ital. i., 370, 1848. *Atropis maritima* Griseb. in Led. Fl. Ross. iv., 389, 1853. *Brachypodium maritimum* Roem. & Schultes Syst. ii., 743. *Hydrochloa maritima* Hartm. Gram. 8, 1819. *Molinia maritima* Hartm. Handb. 27, 1820. *Festuca maritima* Nyman Consp. 942, 1882; DC. Fl. Fr. iii., 47. *Festuca thalassica* Kunth Gram. i., 129, 1829. This is one of our most polymorphic grasses with a range of variation quite inadequately described even in Syme's *English Botany*. It has a wide geographical distribution, being found on the coast of nearly every British and all the Irish maritime counties. It is most abundant in muddy estuaries within the reach of tidal influence, salt marshes, gravelly margins of coast-line, or even in damp, rocky places, thinning out and disappearing where fine sea-sand occupies the shore. J. W. White (*Flora Bristol* 660) records *maritima* as growing on blown sand at Burnham, N. Somerset. With so wide a range of habitat and of geographical, edaphic, and soil conditions we might expect such a plastic species (or conglomeration of micro-species) to be a source of confusion to systematic writers. The above synonyms—and the list is by no means exhaustive—show the difficulty there has been in assigning even the generic name. Boswell Syme and Babington chose *Schlerochloa*; Hooker, *Glyceria*; Ascherson & Graebner, *Festuca*; Rouy, *Atropis*; Parlatore, *Puccianellia*; and Grenier & Godron, *Scleropoa*. Not only is the geographical range extensive, but *Glyceria maritima* extends to the limit of the mud seawards, only *Salicornia*, with occasionally submerged *Zostera* (as at Montrose, Poole, etc), acting as advance guards. Landwards it extends as far as the salt wash of the tide reaches. In salt mud-flats *Glyceria maritima* is a very conspicuous feature. The grey-green foliage, with numerous barren shoots and sparse small panicles, often prostrate or decumbent, occupy great tracts through which the tide-waters force their way, making runnels over which the procumbent branches hang. In the soft mud the branches occasionally root. The leaves are often rush-like, but they are folded, not truly junciform. When the wash of the tide becomes less pronounced and the mud changes into a less liquid consistence, the branches tend to become more compact and the stems more erect. In these drier marshes, especially where cattle feed, the plant is only about 3 dm. high, but it has a more upright stem and large panicle. When the ground becomes gravelly, or rather when a stratum of gravel covers a mud-flat or the clayey margin of a tidal stream, the plant becomes distinctly caespitose (here and there a runner suggests what it might do if opportunity offered), and grows to the height of 6—8 dm. It has erect stout stems and comparatively few barren shoots with the characteristic distichous, spreading leaves of the mud form. On distinctly rocky or shingly coasts the plant assumes slightly different modifications. It is the plant which was reported from Ireland as *festuciformis*, and which I named as var. *hibernica* of that species. This *Glyceria* association on our coasts (the *Glycerietum* of Yapp, Johns & Jones) consists of *G. maritima* and *Salicornia*. When the mud is more solidified it forms the *Armerietum* of the same authors. This consists of several species, including *G. maritima* as a more tufted form. As those authors say (*Journ. Ecol.* v., 1917) when *G. maritima* colonises "bare silt, long creeping shoots are formed, which spread rapidly. Later, as the sward becomes higher and denser, the mode of growth changes. The main shoots take up a more erect position, and grow slowly or even die away, while a succession of lateral shoots of limited growth appears, giving the plant a close tufted habit." This tufted habit, however, becomes more specialised as the drainage becomes more complete, and with it come other variations, the cause for which does not at present appear to be ascertained. *Glyceria maritima* is a grass which seems to have been unknown to Linnaeus, its first binomial being given by Hudson in *Fl. Ang.* 34, 1762, where it is defined "Poa paniculata subspicata, spiculis secundis coarctatis, foliis convolutis." Hudson gives two Raian names, *Gramen paniculatum, maritimum vulgatissimum*, Syn. 409, and *Gr. caninum maritimum paniculatum*. In the *Historia* ii., 128, 1286 Ray describes it "Radix fibris albis tenuibus constat, unde plura exeunt germina. Folia brevia longitudine vix palmari, perangusta, carinata lateribus ita adductis et quasi complicatis ut teretia seu juncea videantur. Culmi satis firmi, pedales duobus tribusve geniculis intercepti in summo paniculam gestant palmarem, non multum diffusam, purpurascentem, e locustis seu spicis oblongis angustis, squamosis, non aristatis compositam. In palustribus maritimis ubique frequentissimum est. Hujus alia species occurrit major et elatior multo, ad bicubitalem altitudinem assurgens, stipulis, crassis etiam triticeis majoribus, quam nobis ostendit D. Newton." The first

Raian plant is represented in the Dillenian Herb. and the second is in Bobart's Herb. (*Hist. Ox.* iii., 202, n. 31) The latter consists of panicles only. The character of "radix fibris albis" distinguishes it from *Festuca rubra.*

Smith (*English Flora* i., 118, 1824) unites both plants of Ray under his *G. maritima.* Despite the polymorphism of the Grass few varieties have been described in British Floras. Parnell (*Grasses* 222, 1845) has a variety *hispida* under *Poa maritima*, which essentially differs in the weak and variable characters of the hispid or slightly toothed panicle branches (these also occur in *hibernica*, etc.), and in the more compressed stem. Townsend (*Fl. Hamps.* 648, 1904), under *Sclerochloa*, describes a var. *riparia*, which is a slender plant with fewer spikelets, nerves closer together, and a narrower white border to the lower pale, a character which Syme attributes to the type. Syme (*Eng. Bot.* xi., 103) has a var. *deflexa*, in which the panicle branches are deflexed or reflexed in fruit. In more recent times Praeger records *Glyceria festuciformis* from Strangford Lough. This I went to collect, but found that it graded towards *maritima*, and seemed to differ from the Adriatic plant in several points. Therefore (*Rep. B.E.C.* ii., 482, 1909) I named it var. *hibernica.* (Hackel agreed that it might be a local form). Recently I have seen similar plants in abundance in W. Sussex and S. Hants. The Rev. E. S. Marshall found about Port Victoria and Grain Port in Kent a remarkable form which was identical with one found by M. Foucaud on the coast of Charente-Inférieure, and which was subsequently named by Hackel as *Atropis Foucaudii* Hackel, ex Fouc. in Bull. Soc. Bot. Rochell 173, 1893 (see Husnot *Gram.* 49, 1896). The Kent specimen has flat leaves, and was (*Flora Kent* 405, 1899) 30 inches high, with an inflorescence 9 inches long. It had the silky pubescence on the nerves of the flowering glumes and ciliated upper palea, characters common to other *maritima* forms. It was afterwards reported from Muddiford, Hants., and Auginish Island, Co. Limerick (see *Rep. B.E.C.* 260, 1907). My type specimen from Mr Marshall, though of caespitose growth, has a runner. With the exception of the flat leaves, the presence of a runner, the larger central cavity of the culm, the silky hairs on the lower glume and the ciliate scales it resembles var. *hibernica* from Hants., Sussex and Kent, and Mr Praeger's *festuciformis* from Strangford Lough. Some specimens have the hairs and ciliation of *Foucaudii.* The spikelets of *hibernica* are larger than the true *festuciformis* (10-15 mm. long as against 6-10); the flowers 5 mm. long as against 3-4 mm.; the central hollow of the culm about 1 mm.; the glumelles less unequal than in *festuciformis*. *Hibernica* differs from *Foucaudii* in having usually glabrous glumes and non-ciliate pales; more or less enrolled leaves; broader and often larger spikelets. Therefore *Foucaudii* may be worth separation as a variety. Rouy makes it a Race. One may add, that under the continental specimens sent out as *festuciformis* there is a very considerable range of variation, notably those from Sarepta, and those of Ahlberg from Sweden. These have long capillary panicle branches, but even in Fiori and Beguinot's cult. spec (507 bis) from Val Figheri the plants are truly caespitose; the leaves narrow, convolute; the spikelets small (6-7 mm.), and the glumes not quite glabrous. In wild specimens from Tre Porti the spikelets are from 7-9 mm. This is indeed very close to my V791 from Pagham, except that the outer glumes are nearly sub-equal in the Italian plant. They measure 3 and 4 mm. against 1.75 and 3.5 mm. in the Pagham specimen. In a luxuriant plant of Praeger's the glumes measure 3.5 and 5 mm. On the whole the Irish plants show less divergence in the size of the glumes. Dr Rendle describes the lower glume of the Irish plant as 1½ to 2 lines long, the upper glume 2-2½ lines. Some of my own gathering measured 2.5 and 3.5 mm. The spikelets of the Irish plant are less regular, coarser, and the florets less enrolled than continental *festuciformis*. Both Dr Rendle and Dr Stapf, I believe, now agree that true *festuciformis* has not been found in the British Isles. Therefore a problem in plant distribution, which presented great difficulties—the presence of an Adriatic plant in the eastern shore of North Ireland—does not at present exist. The varied forms of *maritima* require much further study. It is a question whether a number of them can be sufficiently isolated from their allies to be made separate varieties. A very large series of specimens collected in recent years seems to afford a few sub-varieties. The possible occurrence of two hybrids, one with *Borreri* and the other with *distans* are here described. In addition to these there is a northern form from the Forfarshire coast which may possibly be identical with the Swedish *suecica*, but this awaits further study. It may be added that continental authors by no means agree in their descriptions of *festuciformis*. For instance, Reichenbach (*Fl. Excurs.* ii., 45, 1833) says: "panicula oblonga spiculis teretiusculis multifloris, bracteola ext. obtusa hispida, radice repente," but in *Icon. Fl. Germ. et Helv.* i., 48, 1850, he changes his description to "panicula aequali patente; ramis inferioribus subquinis, fructiferis arrectis; spiculis 5-9 floris; floribus lineari-oblongis obsolete 5-nervii subtricrenatis: culmo simplici: turionibus nullis: radice fibrosa." Archangeli (*Fl. Italica* 783) emphasises the stoloniferous growth of *maritima*, and says the glume is not half as long as the glumelle, whereas in *festuciformis* it is more than half as long. Rouy (*Fl. Fr.* xiii., 191, under *Atropis* as a Race) describes *festuciformis* as having no stolons or only upright barren shoots: spikelets shorter than in *Foucaudii*; flowers 2·3 mm. long; stem robust; leaves thick, conduplicate or enrolled, junciform; glumes rather unequal, elliptic, acute; the lower ¾ or ⅘ as long as the contiguous glumelle; the upper roundish-oval or roundish trilobed at the apex; anthers about 1½ mm. (in *maritima* ½ mm). Ascherson and Graebner say the anthers of *festuciformis* are 1.75 to 2 mm. long, in *maritima* 1.75 to 2½ mm. long—a distinction of little value. The anthers of *maritima* vary considerably. I am unable to correlate their size with other characters.

2776. G. MARITIMA × BORRERI = × G. BURDONI. Growing with both the assumed parents at Pagham and, when fresh, looking a good intermediate. It has mostly flat glaucous leaves. The spikelets are broader than in *maritima*. The panicle branches are arranged so as to simulate *Borreri*, but it is a slenderer and taller plant. The glumes and spikelets of the upper branches approach the Kentish *Foucaudii*, of which it has the ciliate pales, which seem to occur in all the *maritima* forms.

2776. G. MARITIMA × DISTANS. Pagham, Sussex W., 1917. Ref. No. V742. This has the stout habit of *G. maritima*, var. *hibernica*. The leaves, however, are mostly flat, the panicle branches long, slender, the lowest 3-4 cm., naked for 1 to 1.2 cm. from the base, the branches straddling or spreading nearly at right angles. This is very near to the var. *deflexa*, differing chiefly in the flatter leaves, the long capillary lower panicle-branches and the more spreading panicle. To this hybrid may also be referred some plants gathered at Pagham in 1916 by the Rev. Preb. Burdon, which had an unusually large and open panicle and narrower spikelets, and also plants from Hayling Island, S. Hants.;

seen in 1917. These had many of the spikelets sterile, the panicle branches patent, ascending and flat leaves. They were growing with both parents, and had something of the facies of *suecica.*

2776. G. MARITIMA Wahl., sub-var. AMETHYSTINA (Meyer Chlor. Hann. 629), Ref. Nos. V 747, Pagham, July 1917; V 731 Chichester Harbour, Sussex W., July 1917. The latter forms a passage to var. *hibernica* in its larger size and more caespitose habit. G. C. DRUCE.

2776. G. MARITIMA Wahl., sub-var. SUB-CAESPITOSA. Ref. No. V 760. An intermediate between *maritima* and var. *hibernica*, having a loosely caespitose habit, but being usually of smaller stature than *hibernica.* In gravelly soil, Chichester Harbour, Sussex W., July 1917. G. C. DRUCE. Ref. No. V 782 from Pagham, Sussex W., scarcely differs, but is slightly nearer *hibernica.*

2776. G. MARITIMA Wahl., var. DEFLEXA (Syme E.B. xi., 103, under *Sclerochloa*). Ref. No. V 741 (*distantiformis*). This suggests a possible cross with *distans*, but I could see no positive evidence of the latter species, nor was *distans* itself noticed in the vicinity. Chichester Harbour, Sussex W., July 1917. This also occurred as the sub-var. *amethystina* (Meyer). G. C. DRUCE.

2776. G. MARITIMA Wahl., var. HIBERNICA (Druce under *festuciformis*). Ref. No. V 740 = *Atropis Foucaudii* Hackel em. Rouy as a Race. *G. festuciformis* Praeger non Heyn. sensu stricto. Chichester Harbour, Sussex W., July 1917. G. C. DRUCE. This differs from Hackel's type *Foucaudii* from Kent, in the smaller spikelets, enrolled leaves, and caespitose growth without runners. Also Ref. No. V 735 from Pagham, Sussex W., July 1917, with smaller spikelets, and something of the look of *peisonis* from Corfu.

2849. HORDEUM MURINUM L., var. INTERMEDIUM Gunther Beck as forma. *H. leporinum* Link. *H. pseudo-murorum* Tapp. Alien, E. Europe. On a newly made embankment, Southport, Lancs., 1911, J. A. WHELDON; Skinwork, Meanwood, Yorks., 1916, E. C. HORRELL.

2893. POLYSTICHUM ACULEATUM Roth, var. PULCHERRIMUM Wills. This beautiful alien fern was for a long time supposed to be barren. Eventually Mr C. T. Druery and Mr Green found a few spores. The majority of the resulting plants came true, but 30 per cent. were a curious and beautiful mutant. As these matured, the majority were "quite of the parental," *i.e. pulcherrimum* type. A few were reversions towards the normal, but, singularly enough, rather towards *angulare* than *aculeatum*. This suggests that hybridisation may have been a factor in the original mutation. The rest were of great beauty, and formed the *gracillimum* Shield Ferns. See Druery in *Brit. Fern Gaz.* ii., 200, 1915.

2893. P. ACULEATUM × SETIFERUM. What are almost without doubt hybrids of these species have been found near Kintbury, Berks.; Lynton, Devon; Throwley Moor, Staffordshire; Chyverton, Cornwall. These have the pinnæ and stalk as in *aculeatum*, but the toothing and texture of *angulare* = *setiferum* Woynar.

2896. DRYOPTERIS REMOTA A. Br. See *Rep. B.E.C.* 260, 1907. Dr F. W. Stansfield queries this being true *remota*. He thinks it may be a form of *dilatata*. See *Brit. Fern Gaz.* iii., 1916.

2906. CYSTOPTERIS FRAGILIS Bernh., var. SEMPERVIRENS Moore. See *Rep. B.E.C.* 260, 1907. Lowe (*Native Ferns*) remarks, "Said to have been found at Tunbridge Wells and in Devonshire." Druery (*Brit. Fern Gaz.* 78, 1910) received it from Corrie Clanmor (?Ceannmor, S. Aberdeen), from Mr W. Young, of Kirkcaldy. Mr Druery sowed spores, and obtained a considerable number of plants. These proved their distinctness winter after winter by remaining not only perfectly evergreen, but practically growing all the year through. It is a robust grower.

2932 (2). SELAGINELLA KRAUSSIANA A. Br. See *Rep. B.E.C.* 434, 1916. In answer to my question about the occurrence of this plant in Donegal, Mr W. A. Lee says, "The possibility of the *Selaginella* having been planted would hardly be entertained, I think, by anyone who knows the situation referred to. It is quite remote from property, and, so far as my observation went, there were few evidences of green-house culture in the nearest town, Bundoran. If any botanist had been unscrupulous enough to plant the species, I think it would have appeared in greater quantity." This record should stimulate further investigation. The geographical distribution, which includes the Azores, where I have seen it, suggests that it might occur as a native species in Ireland. At present its isolated occurrence in such small quantity seems insufficient to warrant its inclusion as an undoubted native species.

NOTES ON PUBLICATIONS, NEW BOOKS, ETC., 1916-7.

(*Owing to exigencies of space and the erratic receipt of foreign works this is necessarily incomplete.*)

FLORA OF THE COUNTY OF KERRY. REG. W. SCULLY, F.L.S. Six plates and map, pp. lxxxi., 406. Hodges, Figgis & Co., Dublin, 1916. In this portly volume is contained a very excellent and comprehensive account of the plants found in the most romantic county in Ireland, and one of the richest in plants peculiar to a single county. Nowhere in the British Islands is there a greater mingling of beauties than that which lies between Killarney and Glengariff. There are no more finely outlined mountains than the Reeks, and the sea coast along Kenmare Bay is extraordinarily beautiful. Such views as are to be seen from the Reeks or from Brandon Mountain live long in the memory. Nowhere are to be found finer contrasting prospects than those one sees in looking down the mountain slopes of Brandon, distant only a mile and a half from the sea, and then turning landwards towards the north-eastern side to view the rough, saxifrage-laden precipices, which have a grandeur peculiarly their own. It has been my good fortune to visit the county repeatedly, and in most brilliant weather, when even on Carrantuohill, the highest Irish summit, one looked in vain for a cloud. I have wandered in March among the bamboos and azaleas at Derreen, when the Reeks were snow-capped and looked like an alpine range. The county is of considerable extent, 1853 square miles, or 1,190,000 acres, of which no less than 191,000 is waste bog and mountain, and 32,800 under water. Kerry has seven mountains over 3000 feet (Carrantuohill is 3414). Eighty-eight are over 2000 and 190 over 1500 feet. It is over this extensive area, in many places exceedingly difficult of access that Mr Scully has so indefatigably laboured, and this Flora is a monument to his industry and skill. He has given a very complete and accurate bibliography and history of the building up of the knowledge of its plants. The physical features of the county are excellently detailed, and there is a sketch of its geology and a description of its districts. Mr Scully claims for Kerry 840 species or sub-species of the 1150 recorded for the whole of Ireland. So far as numbers go it is only slightly richer than Dublin, which is less than a fifth its size. One must bear in mind, however, that many of the eastern plants do not reach the western side of Ireland. Donegal, of about the same area, has a few more species, but a closer comparison with the Dublin Flora will show that of purely native species Kerry has the larger number. From its great humidity Kerry is specially rich in Cyperaceæ and Filices. Oddly enough, with such an extensive and varied seaboard, it has comparatively few maritime species, 60 only of the 80 Irish species being recorded. The deficiency is, the author thinks, probably due to the fierce Atlantic gales, which have a most destructive influence on maritime vegetation. The county offers many fascinating instances of plant distribution Among the rare species are—*Fumaria officinalis*, *Hypericum perforatum*, *Ononis repens*, *Pimpinella Saxifraga*, *Anthriscus sylvestris*, *Linaria vulgaris*, *Carex gracilis*, and *Poa nemoralis*. Among other rarities are—*Ranunculus Lingua*, *Allium vineale*, *Potamogeton lucens* and *Carex disticha*; while *Thalictrum flavum*, *Ranunculus circinatus*, *Radicula amphibia*, *Viola hirta*, *Parnassia*, *Cynoglossum officinale*, *Euphorbia exigua*, *Orchis Morio*, *Glyceria distans* and *Hordeum* species have not as yet been found. Certain species are unknown elsewhere in Ireland—*Sibthorpia* and *Utricularia Bremii*, which the writer had the good fortune to add to its flora (found near the Gap of Dunloe): *Simethis planifolia* (*Pubilaria*), which grows near Bournemouth, whence in all probability it was brought with seeds of the maritime pine; and a variety *laevis* of *Agrostis canina*, which the writer found on Brandon Cliffs. It is, however, in the saxifrages that the Kerry Flora is so rich, and the puzzling maze of the *Geum* and *umbrosum* sections has received due treatment by Mr Scully. He gives several plates of the leaves of the varieties of these species, and shows that the Linnean *S. hirsuta* is a hybrid of the two, and that it frequently crosses with one or other parent. Prof. H. Dixon himself produced artificial hybrids and thus substantiates this statement. Mr Scully believes *S. Geum* is a diminishing species in Ireland. It is certainly much less plentiful about Killarney than it was in the seventies. Mr Scully is by no means a splitter: indeed he has grouped all the hypnoid saxifrages under *S. decipiens*, giving *groenlandica*, *Sternbergii*, and *sponhemica* as varieties. This, however, is much too conservative a view. There are certainly two or three good species on the Brandon range. He quite rightly rejects *S. Andrewsii* as a Kerry plant. Doubtless it is of garden origin. For the first time in a British Flora the exotic *Escallonia macrantha* and *Fuchsia Riccartoni* appear. The latter is said to increase very rarely by seeding. Does it ever produce seedlings, and do they come true? The Fuchsia is said to be a hybrid raised at Riccarton, near Edinburgh (hence its name), one of its parents being *globosa*. Seedling forms would be greatly valued, and notice should be taken if any revert to the *globosa* type. *Orchis latifolia* and *O. incarnata* are said to be common and generally distributed. The former is recorded from all but one of the districts, the latter from all. They often occur in damp hollows in sand hills. Where they grow together intermediate forms have been gathered. Here again there is a rich field for the worker. The writer would gladly undertake the comparison of fresh specimens. Sufficient has been said to show that the presence of this Flora in the library of every British botanist is well nigh indispensable. Mr Scully is the last one to say the work is complete, but we are very grateful that he has removed the reproach that the county of Kerry had no published Flora. Other botanists will be induced to visit this charming region with such an excellent guide to its floral treasures, and one can confidently predict that other, and it may be very interesting plants, will in the not distant future be added to the list.

MONOGRAPHIE DU GENRE MELAMPYRUM par GUSTAVE BEAUVERD, Conservateur de l'Herbier Boissier. 25 figures, 3 graphiques and 3 cartes dans le texte, pp. 290-656, quarto. Mémoires de la Société de Physique et d'Histoire Naturelle de Genève, vol. 38, fasc. 6. 1916. Mémoire couronné du prix de Candolle par la dernière Société. A long expected monograph, which has occupied the attention for several years of the indefatigable curator of the Boissier Herbarium at Chambesy, and one which will add to his already great achievements in systematic botany. The species of *Melampyrum* are here very fully treated. To British botanists the investigations into the four species found in our own islands are necessarily of supreme interest, especially as one of them, *M. pratense*, is so polymorphic in character. It was the very great range of variability of *pratense* and *sylvaticum* in Switzerland which induced M. Beauverd to begin their study. In the Introduction full acknowledgment is paid to those who have assisted him. Among them it is pleasing to see the names of his wife and daughter. The plan of the Monograph is as follows:—Chap. 1.—History. This includes anatomy, morphology, biology, physiology, teratology, systematic and botanical geography. Chap. 2.—Morphological Notes. Here a very complete list of authorities cited is given. There is one slight mistake. In the *Naturalist* for 1885 *hians* is described by me as a variety, not as a form. Chap. 3.—Biologic Notes. Chap. 4.—Properties and Uses. The blackening of *pratense* in drying is said here not to be caused by the presence of indican. Chap. 5.—Geographical Distribution. All the species are natives of the Old World except *M. lineare*, which occupies the woody region of cold and temperate North America, stretching right across Canada from Nova Scotia to British Columbia, and extending southwards as far as Carolina, Kentucky and Minnesota, *i.e.*, the country situate between 34° to 52° N. lat. and 65° to 130° W. long. *M. lineare* is also a polymorphic species, and like the rest of the genus hemi-parasitic: in fact it is the American homologue of the European *pratense* in its variability, but unlike that species it does not turn black in drying. Four species are represented in the immense region of Central Asia—*M. indicum*, *M. laxum*, *M. roseum*, and *M. arcuatum*. *M. indicum* Hook. and Thompson ascends in the Khasian Hills to 2000 metres. *M. laxum* Miquel is found in China, Japan and Corea. *M. roseum* Maxim. stretches across Asia into China, Manchuria, Corea and Japan. *M. arcuatum* Nakai is confined to Japan. In the Pontic-Caspian area there are four species in addition to *M. arvense*. These are *M. stenophyllum* Boiss., which stands between *pratense* and *nemorosum*, and has been confused with both; *M. caucasicum* Bunge, the Caucasus; *M. Alboffianum* Beauv., Trans-Caucasus, and *M. chlorostachyum* Beauv., Caspian area. The three last are allied to *M. arvense*. The European area has five species, which include the four found in Britain and *M. nemorosum*, which also spreads into Western Asia. The last is a very beautiful and variable species, and with its continental distribution might well have reached our shores. The very copious details of the four British species have been treated on pages 40-8 of the *Report*, by kind permission of our honorary member, M. Beauverd. The author in his treatment of the subject has included some very valuable cartes of the distribution of the species. Chap. 6 treats of the affinities of the genus, which is, of course, with the Rhinanths. He places *Melampyrum* after the recently described *Dispermotheca* (*Bartsia viscosa*), then *Odontites*, *Euphrasia*, *Bartsia*, *Bellardia*, *Parentucellia* and *Rhinanthus*. He puts *Tozzia* as a sub-tribe, and he leaves out of the series *Pedicularis*, which British authors have hitherto included in the true *Rhinanthus*. Chap. 7.—Classification, with Dissections of the Flowers. Revision of the Sub-genera. These are :—

- Section A. Incompleta.
    - Sous-sect. 1, Carinata. Bractées repliées-carénées—*M. cristatum.*
    - Sous-sect. 2, Complanata. Bractées planes.
        - Group (*a*), Denudata. Corolle dépourvue de nectarostège—*M. chlorostachyum* Beauv.
        - Group (*b*), Vestita. Corolle munie d'un nectarostège.
            - Laxa. Inflorescence lâche—*M. lineare*, *M. pratense*, *M. stenophyllum.*
            - Spicata. Inflorescence disposée en épi sub-cylindrique—*M. Albofiianum* Beauv.
- Section B. Completa.
    - Sous-sect. Complanata.
        - Group (*a*), Denudata (pas de Groupe *b*).
            - Spicata. Inflorescence en épi cylindrique—*M. arvense*, *M. caucasicum* Bunge.
            - Laxiflora. Inflorescence lâche, disposée en racème dorsiventral—*M. laxum*, *M. indicum*, *M. roseum*, *M. nemorosum*, *M. arcuatum*, *M. sylvaticum.*

A full description of the fourteen species is then given, and most laborious and painstaking "Critères des divisions sub-spécifiques: leur hiérarchie." Hybridity is evidently very rare in the genus. The few suggested ones are fully discussed, as are questions of nomenclature. An alphabetical list of the 459 botanical works consulted in the preparation of the Monograph is appended, and the very complete Index extends to 13 pages. The very warmest thanks and the highest appreciation of this masterly piece of systematic work are due to M. Beauverd, who has not only given this excellent description and history, but has also enriched the genus with two good species and a large number of subordinate forms.

Proceedings of the Bristol Naturalists' Society, vol. 3, pt. 2, November 1912 (1911). Bristol Field Botany in 1912, Miss I. M. Roper. *Abutilon Avicennae*, *Trigonella gladiata*, *Lathyrus hirsutus*, Arno's Vale, 34; *Potentilla argentea*, Portishead, Somerset N.;

Jasione montana, Clevedon, Somerset N.; *Symphytum tuberosum* L., *Veronica hybrida*, near Bristol, Somerset N., are among the species noted. Vol. 4, t. 1, July 1914 (1913). Some Historical Associations of Flowers, the Presidential Address by Miss I. M. Roper. Fifty Years of Botany in Bristol by J. Walter White is a very valuable résumé of the work done by botanists on the flora of the very interesting area, which has been so thoroughly and charmingly discussed in Mr White's *Flora of Bristol*. Botanical Note by Mr J. White adds *Bromus interruptus* to the Bristol area and gives additional localities for *Antennaria dioica* and *Carex divisa*. Vol. 4, pt. 2, August 1915 (1914). Permanency in the growth of Plants by the President, Miss I. M. Roper. Bristol Botany in 1914, J. W. White, adds *Heliotropium europaeum* (alien), *Taraxacum palustre*, *Campanula patula*, and *Juncus tenuis* (Mrs Sandwith) Botany of the Steep Holme, Miss I. M. Roper.

The British Fern Gazette. Published Quarterly. Edited by C. T. Druery (now by F. W. Stansfield, Oxford Road, Reading). The Organ of the British Pteridological Society. Sub. 5/- ann. Indispensable to the grower and collector of British ferns.

Ascherson und Graebner, Synopsis der Mittel-Europaischen Flora. Band vi.-vii., Lief. 92, February 27, 1917. *Euphorbia*, A. Thellung, pp. 421-479. In this the high standard of botanical and literary treatment is well maintained. *E. Peplis* is the only British species treated in this portion. It is described as having two forms—a red-stemmed *Erythrocaulis* Delpino Redic. Accad. Sc. Fis. e. mat. Napoli, 133, 1897, to which my plants from S. Devon may be referred, and the *Xanthocaulis* Delpino, *l.c.* They are based on the two plants mentioned by Tournefort and Magnol. Reference is also made to the occurrence of the alien, *E. prostrata*, in Hampshire.

Armstrong, S. F. British Grasses and their Employment in Agriculture, pp. viii., 199, tt. 175, Camb. Univ. Press, 1917; 6/-.

Bailey, L. H. The Standard Cyclopedia of Horticulture, vol. vi. S-Z, pp. v., 3043 to 3639. Macmillan & Co., New York; 25/-.

Bateson, Prof. W. A. Root-Cutting Chimeras and Sports, Journal of Genetics, vi., December 1916.

BEGUINOT. FLORA PADOVANA, pt. iii. Dist. Geog., pp. 611-764, tt. xx. Padova, 1914.

BEWS, Prof. J. W. PLANT ECOLOGY OF THE DRAKENSBERG RANGE. In Ann. Natal Museum, iii., pt. 3.

BLATTER, E. FLORA OF ADEN, Rec. Bot. Surv. India, vii., n. 3, 1916, pp. 337-418. See *Rep. B.E.C.* 235, 1915, and 450, 1916. From Hydrocharitaceae to Finis. The Cryptogams of this arid spot are given and include 1 Fungus and 5 Lichens. This part completes the Flora. See *Rep. B.E.C., l.c.*

BONNIER, Prof. GASTON. NAME THIS FLOWER, pp. xii., 31, tt. 64. J. M. Dent & Co., London and Toronto, 1917; 6/4. Translated by Prof. G. Boulger.

BRENCHLEY, WINIFRED E., D.Sc. THE EFFECTS OF WEEDS UPON CEREAL CROPS, New Phyt., 53, 1917. These experiments proved that the weeds *Papaver Rhoeas*, *Spergula* and *Alopecurus myosuroides*, which were grown with wheat, had no toxic effects on the soil.

CARLETON, Prof. MARK A. THE SMALL GRAINS, pp. xxxii., 699. Macmillan & Co., London, 1916; 7/6. This gives an excellent and erudite account of the different kinds of wheat and other cereals—oats, rye, barley, buckwheat, rice, and of the areas under their cultivation in the United States.

CLEMENTS, Prof. F. E. PLANT SUCCESSION: AN ANALYSIS OF THE DEVELOPMENT OF VEGETATION, pp. xiii., 512, with 61 photo plates and 51 text figs. Carnegie Inst., Washington, 1916.

COUNTRY-SIDE LEAFLET. Edited by E. Kay Robinson, Warham, Glamorgan Road, Hampton Wick. Annual subscription, 1/6. British Orchids by H. Neville Brothers, age 14¾.

DALLMAN, A. C. On *Ranunculus Ficaria*. See Lancashire and Cheshire Naturalist, 1916 and 1917. In this excellent paper Mr Dallman says he had upwards of 30,000 flowers examined in the spring of 1916. With the addition of those examined in 1913 that totals 50,000 flowers from sixteen counties. The great majority of the flowers had three calyx leaves, the Sussex plants from Hurstmonceux having 984 per thousand. The average for Scotland was

964 per thousand, for England 954. Four sepalled flowers are scarce, varying from 2 (Cheshire) to 64 (Worcestershire) per thousand. Flowers with five sepals varied from 5 to 18 per thousand, the last being obtained from Gourock. 22,000 flowers only afforded three examples of six sepalled flowers. Eight petalled blossoms are the most frequent, varying from 7.918 to 8.636 per thousand. The average number of perianth leaves is about two. Mr Dallman says that the evidence so far obtained does not admit of environmental factors being considered sufficient to account for the variation in the floral leaves of *Ficaria*.

Davie, R. C., M.A., D.Sc. On the Leaf-trace in some Pinnate Leaves. Trans. Royal Soc. Edinb., lii., pt. 1., n. i., 1917. In addition to tropical ferns and other plants the British *Polypodium vulgare*, from very many Scottish localities, afforded confirmation of the results which had been observed in other plants. The factors which control the leaf-trace and its system of branching are:—(*a*) Systematic position; (*b*) the length of the leaf and the size of its appendages—Ferns and Cycads; (*c*) the order of the development of the pinnæ—Cycads and Dicotyledons; (*d*) the type of the vascular system found in the stem—Dicotyledons and Monocotyledons.

Davis, H. Valentine, B.Sc. Food Gardening for Beginners and Experts. A new, simple and scientific plan for growing food vegetables all the year round. Price, sixpence net. G. Bell & Co., London.

Druce, G. Claridge. Hayward's Botanical Pocket-Book. Fifteenth edition, revised and enlarged, foolscap 8vo., limp cloth, 4/6; limp leather, wallet with pencil, etc., 6/-; velvet calf, 7/6. G. Bell & Co., London, 1917. This includes in an appendix most of the new varieties of British plants recorded in *Rep. B.E.C.* for the past four years.

Transactions and Proceedings of the Botanical Society of Edinburgh, vol. xxvi., pt. iv., 1916. *Primula obconica* and its Microforms, Prof. I. B. Balfour, p. 301. Flora of Culbin Sands, Donald Patton and E. J. Stewart, p. 345. Notes on Some Scottish Plants, J. Fraser, p. 404. W. Arthur, King's Botanist, 1715-16, Prof. I. B. Balfour, p. 375. *Juncus tenuis* in Britain, p. 408, and *Hydrilla verticillata*, A. Bennett, p. 422. Scottish Alpine Bot. Club Excursion, A. Cowan, p. 429. Vol. xxvii., pt. v., 1916. Plant Association, N. W. Yunnan, F. Kingdon Ward, p. 13. Notes on Flora of the Orkney Isles, A. Bennett, p. 54. Saxifrages of the Diplera section, Prof. I. B. Balfour, p. 65. *Rhododendron trichocladum* Franch. and its allies, and *R. lacteum* Fr., pp. 79, 97. A Hybrid Potamogeton *P. venustus*, new to the British Isles, A. Bennett, p. 104.

EVANS, A. H., M.A. Notes on Plants found in the District worked by the Berwickshire Naturalists' Club. See History, vol. xxiii., 217. A valuable paper, in which Mr Evans has brought together many records omitted from Mr Anderson's compilation already noted. Two plants on old evidence may well be excluded. One *Scheuchzeria*, "on the carriage drive at Badnell Vicarage," was no more likely to be found there than on the hat of the vicar's wife. *Juncus filiformis* from a hill-top is almost as problematical. Both, of course, Mr Evans rejects. *Mentha piperita* may be added for Roxburgh, *M. alopecuroides* for Selkirk, and *M. spicata* for Peebles, etc.

ELLIS, E. F. JOTTINGS OF A GENTLEMAN GARDENER. L. Reeve & Co.; 3/6.

ELLIS, J. D. HERBS USED IN MEDICINE, pp. 32, t. 16. Nat. Herb. Growing Ass., 1917; 3/-.

FARRER, REGINALD. ON THE EAVES OF THE WORLD. 2 vols. 8vo. Vol. i., pp. 323; ii., 336. E. Arnold, London, 1917; 30/- net.

FRASER, J., and HEMSLEY, A. JOHNSON'S GARDENERS' DICTIONARY, 8vo., 923. Routledge; 12/-. The list of species, with a mass of detailed information, is alphabetically arranged in double columns under each genus. An extremely valuable and cheap publication.

FRITSCH, F. E., D.Sc., Ph.D., and SALISBURY, E. J., D.Sc. AN INTRODUCTION TO THE STUDY OF PLANTS, pp. viii., 397, with 8 plates and 223 text fig. Second edition. G. Bell & Co., London, 1917. One of the most comprehensive and useful books of its kind. To those students who wish to obtain more than a superficial knowledge of the subject it may be strongly recommended.

A. Fuchs. Mitt. Bayer Bot. Ges. iii., 315, 1916. *Orchis purpureus*, var. *moravicus* × *O. tridentatus*, race *commutatus*. For this M. Schultze proposes the name × *O. Fuchsii*, but G. C. Druce has already published a species under that name.

Ganong, Prof. W. F. A Text-Book of Botany for Colleges, pp. xi., 401. Macmillan & Co., 1916; 18/6. This deals with the Structures and Functions of Plants.

Gardeners' Chronicle. This extremely useful periodical still keeps up a brave show despite the difficulties it has to encounter in these trying times. Among its contents for 1917 are Leaf-Glands in the Leaves of Peaches and Nectarines, p. 6. These glands are of two types, round and kidney-shaped. A remarkable correlation exists between the presence of glands and the detailed structure of the leaf. Glandless leaves have always serrate margins, and leaves with glands have crenate margins, but there are some, alas, of an intermediate character. Recent examinations by C. T. Gregory on a large scale show that the broad principle of serrate leaves being glandless is correct. These glands he contends are modified leaf-spines. Notes from a Galloway Garden, p. 13. Sir Herbert Maxwell relates that last year he found in pure shell sand, near Monreith, Wigton, a specimen of *Orchis pyramidalis*, a lime-loving species. There is no lime in the soil thereabouts, and the presence, Sir Herbert thinks, is due to wind and water-borne specimens from the chalk of Antrim or the lime-stone of Cumberland. He only knows of two instances of its occurrence in Scotland—one on the side of Luce Bay in the same county, the other in the Isle of Colonsay. The comminuted shell in the sea-sand contains lime sufficient to meet its need. In similar conditions the writer has found it in Alderney, and it has sporadically appeared on sea-sand in Jersey. In 1883 the writer found it near Castle Kennedy, and Scott-Elliot records it from Dumfries and Kirkcudbright. So that after all there is a possibility of its very minute seeds being wind-borne. In the Channel Isles it grew well above tidal influence, but of course the seeds would travel far above that level when carried with the spray. The Chilian *Lardizabala biternata*, says Sir Herbert, revels in our western humidity. The difficulty is to keep it within bounds. These articles are continued through the year. The Cluster Oak of Savernake Forest with plate, A. Henry, p. 34. Mr Henry describes this as var. *cristata*, see p. 52. It forms a tree about 30 feet high and 5 feet 2 in. in girth at 5 feet from the ground. The one seedling obtained is like its parent. Mr Henry says the cut-leaved walnut, var. *laciniata*, also reproduced true. He thinks in such cases true sexual reproduction does not occur, and that such apogamic reproduction is not so rare in trees as is ordinarily believed. White Wood Strawberry, p. 88. Jane Austen in *Emma*, published in 1816, says "the best fruit in England—everybodies favourite . . . every sort good—hautboy infinitely superior—no comparison—hautboys very scarce—Chili preferred—White Wood finest flavour of all." The question is asked, what is the White Wood? On p. 101 the answer is given that it is the white-fruited form of *F. vesca*, which was very popular in the early days of last century, and which, added to the garden fruit, much improved the flavour of the jam. It may be added that the writer's var. *bercheriensis* is a large-leaved, white-fruited form of *vesca* which was, after cultivation, considered by Count Saulms-Laubach to be originally a cultivated form that had reverted to some extent to the wild type. Mr Whitwell, who also grew it, said: "They certainly were of excellent flavour, as the village children had found out." Aldenham Garden in Winter, p. 93. Mesopotamia in January, F. K. Ward, p. 131. Insecticides, p. 139. Plantae Wilsoniadae, p. 144. Crusoe's Island, Juan Fernandez, and other numbers, J. Hutchinson, p. 199. A series of very readable articles. Mossy Saxifrages, p. 205. *Anemone Pulsatilla*, W. R. Dykes, with plate, p. 209. Alpines without a Rock Garden, p. 211. The writer suggests sowing seeds of the Cheddar Pink and other rarities on other peoples' garden walls—a practice which, if widely followed, would increase our adventitious flora, but greatly to be deprecated as apt to confuse scientific facts. Surely in war-time a better outlet for energy might be discovered. Letters from Japan, E. H. Wilson, p. 249. Double Flowers, p. 254. Pt. 2. *Adansonia digitata* on the Ganges (misprinted *Adamsonia*), p. 22. The Lizard on a Morning in June, J. Hutchinson, p. 31, records the *Mesembryanthemum* from Caerthillian as *M. aequilaterale*. The yellow-flowered *M. edule* from the Cape, which was first identified as British by the writer, was also gathered there by Mr Hutchinson. He also found *M. acinaciforme* near Porthleven and Looe Pool, where the writer saw it many years ago. It was, however, so evidently planted that it was not thought worth recording. Prof. Graebner definitely named a Cornish plant *acinaciforme* when on the International Phytogeographical Excursion in 1911. Vegetation of Koweit India p. 50. *Athyrium Filix-foemina*, var. *clarissimum*, p. 81. A good plate of this is shown (fig. 30). It is a beautiful variety, originally found by Mr B. Moule of North Devon in 1868, and is especially interesting from the phenomenon of apospory being discovered by Mr Druery on one of its fronds. White-fruited Whortleberry, p. 84. *Polygonum polystachyum*, fig. 34, p. 96. This has recently been found quasi-wild in Devon and Lincolnshire. Flora of the Chinese-Tibet Borderland, G. Forrest, p. 105. Trees at Tortworth Court, Gloucestershire, p. 115. The Colour of Flowers, p. 130. Weeds in Australia, H. W. Davey, p. 137. The worst weed in Victoria appears to be *Hypericum perforatum*. The Blackberry is a serious pest, as are *Rosa rugosa*, *Lycium horridum*, a Cape plant, often used for hedges, and *Echium violaceum*, known as Paterson's Curse. The latter follows the railway line. In 1914 the writer saw by the road-sides and in pastures between Adelaide and the Murray River millions of the dry stems of an *Echium*, which may have been this species. Pergolas, p. 175. Worthington G. Smith, memoir and portrait, p. 180.

GOULDING, E., D.Sc., F.I.C. COTTON AND VEGETABLE FIBRES, THEIR PRODUCTION AND UTILISATION, with a preface by Sir Wyndham R. Dunstan, pp. x., 230. An Imperial Institute Handbook. John Murray, London, 1917 ; 6/-. This forms an extremely valuable addition to the works, such as "Rubber" and "Cocoa," already issued under the auspices of the Imperial Institute. It gives in a very concise form an extraordinary amount of practical information as to the origin, character, cultivation and utilisation of Cotton and other vegetable fibres. It also gives their classification and their botanical and geographical sources. Of these Cotton is, of course, the most important, and, as is the case with plants that have been long in cultivation, there are great divergences of opinion as to the identification of the various cultivated forms. Linnaeus admitted 5 species, the Kew Index enumerates 45, Todaro 54, and Watt describes 42. The plant in cultivation responds to altered conditions. It readily hybridises, and has a great range of variation. Over 100 distinct races of Upland Cottons have been brought into existence in efforts to improve the stock. Cotton is the greatest manufacturing industry of the British Isles. Yarn to the amount of £96,000,000 and cotton piece goods to the value of £82,000,000 were produced in 1907, giving employment to over half a million people. The total exports in 1913 amounted to £125,600,951. The areas of Cotton under cultivation are mentioned, and its mode of cultivation, its diseases, and commercial varieties are described. The finest quality is the "Sea Island," which has its origin in Carolina, Georgia, and Florida, and which I have seen extensively grown in St. Vincent. Other fibres described are:—Flax (*Linum usitatissimum*), which gives its name to the Rue Cannebière at Marseilles, its methods of preparation and production—the chief source being Russia, which yearly produces three-quarters of a million tons, nearly ten times as much as all the other countries combined; Hemp (*Cannabis sativa*), of which again Russia produces 356,000 tons against about 150,000 from other sources; Sun Hemp from *Crotolaria juncea* is of Indian origin, while Ramie comes from an Urticaceous plant known as *Boehmeria nivea*, and is also Indian and Chinese; Jute, the substance which has given Dundee its commercial prosperity, is obtained from two species of *Corchorus*, belonging to the *Tiliaceae*, and its cultivation covers nearly 3½ million acres in India. Other sources of supply are Nigeria, Sierra Leone, and Gambia. The various substitutes are also detailed. Cordage fibres are dealt with, such as Manilla Hemp from *Musa textilis*; Sisal Hemp from an aloe, *Agave sisalana*; Mauritius Hemp from *Furcraea gigantea*; and New Zealand Hemp from *Phormium tenax*. a Liliaceous plant. The latter has recently been cultivated with good results in the west of Scotland. Coir-Coco nut fibre and other palm products are detailed, and valuable technical information is given as to wood-pulp and other paper-making products.

HAGSTRÖM, J. O. CRITICAL RESEARCHES ON POTAMOGETON. pp. 281, tt. 119, 4to. Almquist & Wiksells. Reprinted from Kungliga Svenska Vetensk. Handl., band. 55, n. 5, 1916.

HARSHBERGER, J. W. GERMINATION OF ACORNS. American Forestry xxii., 687, 1916. The author's method is to germinate green acorns before the shells begin to glaze and then to winter the young oaks in a cold frame. The method was suggested by Guppy's discovery of viviparous acorns in England

HIERN, W. P. Botany in Trans. Devonshire Assoc. xlviii., pp. 137-153, 1916. A very valuable contribution to the botany of the eight botanical districts into which the county is divided. It includes not only the Phanerogams but Cryptogams, and several galls are incidentally mentioned as new British species. Miss Larter conbutes some Phenological notes. Two new Seaweeds are included, and a new variety of *Hypericum Desetangsii*. The latter was found by Mr A. Sharland. It is greatly to be desired that the excellent example set in this Report should be followed by the Natural History Societies of other counties, so that systematic records of the additions to the floras might be more easily referred to, and put on permanent record.

HITCHCOCK, A. S., and CHASE, AGNES. Contr. United States Nat. Herb. GRASSES OF THE WEST INDIES. Vol. 18, pt. 7, 1917. These include 110 genera and 455 species One of the genera is *Saugetia*, named after Brother Léon, Joseph Sylvestre Sauget, of the College La Salle, one of the most active of Cuban botanists. *Ed. News.*

HOLMBERG, O. R. FORMS OF PUCCINELLIA (GLYCERIA) IN SCANDINAVIA. Bot. Notiser 251-4, 191, 1916. The author mentions *P. maritima* (Huds.) Parl., f. *explanata* (Lindeb.): var. *reptans* (Hartm.): *P. baltica* (Lindeb.), and a form, × *P. Duseni* Lindeb.: *P. rupestris* (With.) Fernald, an invalid name: *P. distans* Parl., f. *capillaris* = *pulvinata* Fr., f. *litoralis* Hackel; × *elata* (*distans* × *suecica*).

HORT, SIR ARTHUR. THEOPHRASTUS' ENQUIRY INTO PLANTS, AND MINOR WORKS ON ODOURS AND WEATHER SIGNS. 2 vols., pp. xxviii., 475; ix., pp. 499, 8vo. W. Heinneman, London; 5 - each.

THE IRISH NATURALIST, 1916 to May 1917. *Andromeda Polifolia* L. N. C. R. for Co. Antrim, W. J. C. Tomlinson. Author Index for 25 volumes by Alice Scarff, p. 173, a most valuable and welcome production. *Characeae* of Fanad, E. Donegal, Canon G. R. Bullock-Webster (see *Rep. B.E.C.* 511, 1916). *Lactuca muralis*, *Zostera marina*, var. *angustifolia*, and *Z. nana* in Co. Down, Rev. C. H.

Waddell. *Hypopitys* in Co. Leitrim, Mrs Praeger. *Elymus* and *Asparagus officinalis* on North Bull, Dublin, N. Colgan. Bryophytes of the Glen of the Downs, Co. Wicklow, D. M'Ardle. *Selaginella Kraussiana*, Bundoran, W. A. Lee (see p. 63). We regret to notice that in the Irish revolt the back numbers and other property of *The Irish Naturalist* were destroyed.

JEFFREY, E. C. THE ANATOMY OF WOODY PLANTS. Chicago Univ. Press. pp. x., 478, 1917 : 4 dollars.

JEKYLL, GERTRUDE. ANNUALS AND BIENNIALS; the Best Annual and Biennial Plants and their Use in the Garden, with Cultural Notes by E. H. Jenkins, pp. 174. Country Life Offices; 7/6. Of the 14 illustrations some are coloured, that of "Nigella, Miss Jekyll" forming a charming frontispiece. The notes on the selection and cultivation are extremely valuable. On this subject no one can speak with greater authority than Miss Jekyll, who adds to her knowledge of the subject the requisite quality of taste in a very high degree. There are so many hardy or semi-hardy plants belonging to the grade Miss Jekyll writes about that the process of selection is made easier by the use of this charming volume.

JOURNAL OF THE ROYAL HORTICULTURAL SOCIETY, October 1916. Early mention of the Double Wallflower, E. Saunders. Flora of North-Western Yunnan, G. Forrest. Report of Work in Kan Su and Tibet in 1914, R. Farrer. Medicinal Herbs, E. M. Holmes.

LAGERHEIM, G. Svensk Bot. Tidskr. x., p. 67-72, 1916. *Anemone nemorosa*, var. *cyanopsis*. Floribus sepalis ad basim macula coerulea preditis. Var.? *micrantha* Lagerh, *l.c.* Floribus hermaphrodítis parvis, sepalis nonnihil incurvis, in parte interiore subviridibus, subtus plus minusve viridi-rubris; floribus femineis minimis, sepalis gynaeceo subappressis rubris. The former seems to be only a weak variation of var. *caerulea*, the latter surely a monstrous form, not a variety. (Compare *Rep.* iv., 397 and *Annals of Botany* 525, 1916).

LONG, H. C. PLANTS POISONOUS TO LIVE STOCK, pp. vi., 119. Cambridge University Press; 6/-.

LOTSY, J. P. EVOLUTION BY MEANS OF HYBRIDIZATION, 8vo., pp. x., 116. M. Nijhoff, The Hague, 1916: 6/-.

MACVICAR, SYMERS M., in Trans. and Proc. Bot. Soc. of Edinburgh, 1910. The Distribution of Hepaticae in Scotland, pp. 336, in vol. xxv. A splendid compilation, including a historical survey from Sir Robert Sibbald onward. 83 species are found growing at three thousand feet and upward.

MAIDEN, J. H., and BETCHE, E. CENSUS OF NEW SOUTH WALES PLANTS. Mr G. J. Playfair adds a Supplement, in which 1000 species and varieties of Algae are enumerated. Gullick, Sydney, 1916.

MANSFIELD, Prof. W. HISTOLOGY OF MEDICINAL PLANTS. New York, Wiley & Sons; London, Chapman & Hall: 3/6.

MILLAIS, J. G. RHODODENDRONS. An account of all the species, including azaleas and the various hybrids. 4to., 14 collotype plates. Longmans, Green & Co.: £8 8/-. See cover of *Report*.

THE NATURALIST, 1917, edited by T. Sheppard, M.Sc., and T. W. Woodhead, Ph.D., M.Sc. April. Observations on *Ranunculus Ficaria*, Mary A. Johnstone, B.Sc., continued from p. 105. 1. Flowering forms are not the commonest in shade habitats. 2. The tuber-bearing form is common in such places. 3. The tuber-bearing form is not limited to shade. It often exists intermingled with, or close by the other, in even the most brilliantly lit spaces. 4. The closer community of the grass-land never harbours the tuber-bearer. 5. On being subjected to change of surroundings the plant seems to retain its tuber-bearing characteristic, even when it changes many others. May. *Orobanche reticulata* Wallr. Mr Arthur Bennett records it for N.-E. Yorks., 1881, G. Webster, as *O. minor*. He makes no reference to this *Report* where the plant was first recorded. At that date he had placed it with *O. rubra* Sm., but lately saw it could not be that species. It lacks the exact station. June. Economic Mycology—the Beneficial and Injurious Influences of Fungi. The Presidental Address to the Yorkshire Naturalists' Union, delivered at Selby, Dec. 2, 1916, p. 185. An exceedingly pleasing and useful essay. Its author has recently presented to the Botanical Department of the Leeds University a collection of Myxomycetes. Obituary of William Foggitt, with portrait, p. 205. July. Obituary of Samuel Margerison, p. 235. Poem, by F. A. Lees, with portrait, p. 270. Hedge Bedstraw among Stone Walls, F. A. Lees, p 328.

Botanical section of the Yorkshire Naturalists' Union, p. 358. *Impatiens glandulifera*, as cited by Mr W. B. Haley, is only a quite recent introduction. "*Convolvulus americanus*" is making headway on the banks of the Calder. Obituary of Robert Braithwaite, with portrait, p. 361.

Nature, 1917. This invaluable publication still maintains its high traditions. Published weekly at 6d, by Macmillan & Co., St. Martin's Street, London, W.C.

Nicholson, C. S. Botany of the District round London, in The Transactions of the London Natural History Society, 1915.

North American Flora. Published by the New York Botanical Garden. This very important work, of which 34 volumes are in course of preparation, at last has a completed one. Vol. 21, pt. 1, November 27, 1916, pp. 1-95, is devoted to the Chenopodiaceae by Paul Carpenter Standley. In his treatment of the family Dr Standley keeps *Roubieva* as a distinct genus from *Chenopodium*. The latter is divided into seventeen sections. One of them, that of Alba, which contains our Common Goosefoot, is treated in a very different manner to that of our British Floras. *C. album* is split into three species—*C. album* proper (*candicans* Lam.), *C. paganum* (*C. album*, var. *viridescens*), and *C. lanceolatum* (*C. album*, var. *integerrimum*). *C. viride* L. replaces *C. opulifolium* Schrad., for which the plate in *Camb. Fl.* i., t. 159, is cited. *C. paganum* replaces *C. album*, var. *virescens*. The latter is an untenable name since St Amans' *viridescens* is three years earlier. *C. lanceolatum* Muhl. is given as a species, 2131 (10), replacing *C. album*, var. *integerrimum*, t. 159 in the *Camb. Fl.* This is also Dr Murr's opinion. *C. chilense* Schrad. (see *Rep. B.E.C.* 334, 1913) must be replaced by *C. vagans* Standley since there is an earlier *C. chilense* Pers. 1805. Under *C. ambrosioides* L. *C. suffruticosum* is put in synonymy. Thellung makes it a variety, a grade apparently unrecognised in this volume. Standley keeps the genus *Blitum* distinct under *B. virgatum*. *Virgatum* is cited of Jessen 1879, but there is an earlier authority for the combination, *i.e.*, Ambrosi Fl. Tyr. ii., 179, 1857. 103 species of Atriplices are described. They form a great feature in the vegetation of the alkaline desert areas. The Sibirian *Axyris*, recently a frequent adventive in Britain, is naturalised in Manitoba and Dakota. Our

British specimens may have come to us from American, not Sibirian sources. Only 9 Salsolas are described, but *S. annua* Sm. and *S. procumbens* Sm. are put as synonyms under *S. europaea.* Following the rule of priority the genus *Dondia* is used instead of the eight years younger *Suaeda.* The authority for *Dondia maritima* should be Ann. Scot. Nat. Hist. 42, 1896—twelve years earlier than the one quoted. *Salsola Kali*, var. *tenuifolia* Tausch = *S. Tragus* Reichb. is described as *S. pestifer* A. Nelson. In pt. 2, June 9, 1917, Amaranthaceae is treated by the same author. Forty-two species are described. Of these *A. hybridus*, *retroflexus*, *spinosus*, *graecizans*, and *deflexus* have been found adventive in Britain. Vol. 34 (pt. 1, 1914, pt. 2, 1915, pt. 3, 1916) treats of the Carduaceae Heleneae-Anthemideae by Per Axel Rydberg and Harvey Monroe Hall. Here it is shown that *Baeria carnosa* Greene of Dunn's *Alien Flora* should be called *Baeria platycarpha* A. Gray. *Anthemis tinctoria* is put in the genus *Cota* = *C. tinctoria* J. Gay. and *A. Cotula* becomes *Maruta Cotula* DC. *Matricaria inodora*, *maritima* and *Chamomilla* are with *M. suaveolens* all placed in the genus *Chamomilla* Gilib., *M. Chamomilla* becoming *C. Chamomilla*, for the authors do not gib at using a duplicated name. *Chrysanthemum Parthenium* becomes *Matricaria Parthenium* and the Ox-eye Daisy is removed from *Chrysanthemum* and is *Leucanthemum Leucanthemum.* *Tanacetum* or *Chrysanthemum Balsamita* also has a doubled name, being *Balsamita Balsamita.* 119 species of *Artemisia* are described. Some of these form the well-known Sagebrush vegetation of the alkaline plains. *A. gnaphalodes* is kept distinct from *A. Ludoviciana.* Thellung makes one a variety of the other. These parts keep up the high standard of merit established in the early numbers. The work is distinguished by terse and lucid descriptions, excellent keys, copious synonymy, good paper and printing, and a most agreeable arrangement and variation of type, all of which make the publication not only one of the largest but one of the most useful Floras hitherto published.

Oliver, W. R. B. Vegetation and Flora of Lord Howe's Island, in Trans. New Zealand Institute, xlix., 94-161. 1917.

Prain, Sir David, Editor of the Flora of Tropical Africa. L. Reeve & Co., London, 1916; 8/-. Vol. vi. sect. ii., pt. 1. Ulmaceae, A. B. Rendle; Cannabinaceae, Moraceae, J. Hutchinson and A. B.

Rendle; vol. ix. pt. 1, 1917, Gramineae, O. Stapf. In *Man* for July 1917, the Geographical Distribution of Kava and Betel, Sir David Prain suggests that Betel is of Papuasian origin. Kava is said to occur spontaneously in the Society and Marquesas Islands, but it is not absolutely ascertained that it is really native there.

Ridge, W. T. B., B.Sc. Report of the Botanical Section of the North Staffordshire Field Club. This is a most excellent production, giving a great mass of valuable information in a very compressed and readily consultable form. Since Garner's *Natural History of the County of Stafford* was published in 1844 and its *Supplement* in 1860, no fewer than fifty papers and addresses treating of Botany by thirty different authors have been read before the Society. On p. 188, 1917, Mr Ridge gives their titles. Scattered through the pages of the fifty volumes of the *Transactions* are 47 lists of plants. These are enumerated in p. 170. Garner gave 865 plants as found in Staffordshire, and of these Mr Ridge believes he recorded 470 for the first time. In the *Transactions* 148 additional plants are recorded, which were unmentioned by Garner, and most of these are new to the Flora. These refer to Angiosperms only. These additions are enumerated on pp. 173-178. *Erigeron alpinus* must be a misnomer. Of *Galium boreale*, *Galeopsis dubia*, and *Potamogeton filiformis*, one would like to see specimens. The records which are new to *Top. Bot.* are given under their respective plants in the succeeding pages.

Rogers, R. W. Flora of Epping Forest in Trans. London Nat. Hist. Soc. (1915), 1916.

Salmon, C. E. Linnean Society, February 1, Sir David Prain, president, in the chair. Mr C. E. Salmon made a communication on "Some Plants that might occur in Britain." These he suggested were *Ranunculus ololeucos*, *Cerastium brachypetalum*, *Alsine danensis*, *Spergula Morisoni*, *Veronica opaca*, *Rhinanthus hirsutus*, *Ruppia brachypus*, *Heleocharis mamillatus*, *Carex frigida* and *C. laevirostris*.

The Selborne Magazine, edited by Wilfrid Mark Webb, F.L.S., monthly, 1917. G. Philip & Son, 32 Fleet Street, London.

Schinz, Prof. Hans, in Berichten der Deutschen Botanisichen Gesellschaft, 1917, has a very appreciative memoir of Daniel Oliver, pp. 99-106, with a very complete list of Oliver's contributions to Science. These occupy four pages.

Schonland, S. A Summary of the Distribution of Genera of South African Flowering Plants, Uitenhage and Port Elizabeth Divisions. See Royal Soc. of South Africa.

Schroeter, Dr C. Der Pilatus, in seinen Pflanzengeographischen und Wirtschaftlichen Verhaltnissen. Von der Eidgenossischen Technischen Hochschule in Zurich zur Erlangung der Würde eines Doktors der Naturwissenschaften geneigte Promotions—arbeit vorgelegt von Karl Amberg, Apotheker aus Schotz (Luzern), Referent Herr Professor Dr C. Schroeter, Korreferent Herr Professor Dr P. Jaccard. pp. 267, with numerous photographs, and a phyto-geographic map of Mount Pilatus and its surroundings. Lucerne, 1916. In this most valuable account of one of the best known Swiss mountains the authors have first given the history of botanical investigations, beginning with Conrad Gesner's *Descriptio montis Fracti sive Pilati, juxta Lucernam* of 1555, and then an account of the Geographie des Gebeites and Geology, the extraordinary curves of the strata being shown on a profile map. The formations represented are:—The Quaternary—Alluvium and Diluvium; the Tertiary—Priabonien, Anversien and Lutetien; the Mittlere Kreide (Mesocretacisch)—Gault; and the Untere Kreide (Eocretacisch). The altitude of Pilatus is 2068 m. as compared with the Rigi 1787 m., Lucerne being 451 m. and Gersan 442 m. The temperature of these places for the twelve months is shown, and very interesting observations on Meteorology are included. The rhyme alluding to the condition of the clouds on Pilatus serving as a weather prophet is quoted:—

> "Si Pilatus pileatus, Aer erit defoecatus.
> Hed de Pilatus e Huet, Soisch's Wätter guet:
> Hed er e Däge, So Ged's gly Räge."

Chapters are also devoted to the rainfall, snowfall and winds. There is an excellent list of the plants found on Pilatus, with their special habitats and altitudinal range. It shows that the Flora consists of about 923 species and 60 sub-species, including 17 Rubi, and 20 Hieracia, 10 hydrids, and about 15 alien species. Among the more interesting species to British botanists are *Scheuchzeria*, *Epipogon*, *Leucojum vernum* and *Senecio paludosus*. *Orchis latifolia* and *Traunsteineri* occur, but not *incarnata*. Then follow some very valuable ecological notes, such as one would expect from Schroeter, that prince among ecological observers.

SMALL, JAMES. Geotropism and the Weber-Fechner Law, in Annals of Botany, xxxi., 313, April 1917. Irritability of the Pollen-presentation mechanism in the Compositae, *l.c.*, pp. 21-268, 1917. Origin and Development of Compositae, in New Phytologist, vol. xvi., 157, 198, 1917.

SOMERVILLE, A. Relation of the Douglas Fir to Lime in Soil, in Journal of Forestry, xi., January 1917.

STANDLEY, PAUL C., in Contributions from the United States National Herbarium, vol. xviii., pt. 3. Studies of Tropical American Phanerogams. *Duggenia* Vahl of 1793 is used in preference to *Gonzalagunia* of Ruiz and Pavon, dating from 1794. In Ind. Kew. the still later *Gonzalea* Pers. of 1805 is adopted. In Central U.S. Nat. Herb., vol. 20, pt. 1, 1917, Mexican and Central American Species of *Ficus*. The genus is a very large one. Engler allows 600 species, but this is much underestimated, as fresh tropical species are being continually described. Probably 1000 is nearer the correct number. Forty-one species are described from this area. Pt. 2 by the same author. See also under North American Flora—Chenopodiaceae.

TEETGEN, ADA B. PROFITABLE HERB GROWING AND COLLECTING. Preface by E. M. Holmes. pp. 180, tt. 13. Offices of Country Life, 1916. This is a practical and useful guide to the above industry, which had such a wonderful boom in 1916, when the most exaggerated ideas as to the importance and the profits to be derived from drug-growing in Britain prevailed. In answer to hundreds of communications it seemed desirable to suggest the growing of potatoes and onions as being likely to be of greater help to the nation than an indiscriminate planting of "Herbs" by people to whom the drugs themselves, their properties and methods of cultivation, were unknown. Doubtless there are a few of national importance and others in demand. The advice given by Miss Teetgen about them is on the whole clear, practical and useful. It must, however, be remembered that the demand for these herbs is after all limited, and that over-production means a more than corresponding lowering of price. On such points the advice of the Herb-growing Association should be sought before investing capital in a somewhat speculative undertaking. Apart from suggestions about growing, Miss Teetgen's descriptions of the herbs and their properties are trustworthy. The plates are somewhat crude. On one of them is a slight misprint—*Inula Conyza* is spelled *bonyza*. One does not remember to have seen yellow-flowered *Digitalis purpurea*. There seems little reason to plant foxglove. A few parishes in the West of England would surely supply all the needs for the home market.

THELLUNG, A. Stratiobotanik in Vierteljahrschrift der Naturforschenden Gesellschaft in Zurich, September 9, 1917. Pflanzen wanderungen unter dem Einfluss des Menschen, in Engler's Bot. Jahrb. 37, 1915. A paper of great interest, treating of the influence of man in the distribution of plants by means of horticulture, wool-washing, etc. 375 species were thus introduced in the South of France, at Port Juvenal, etc., at Hamburg, Hanover, Dessau, by ship-ballast, by railways, canals, etc.

TOUMEY, Prof. J. W. SEEDING AND PLANTING. pp. xxxvi., 455. (Chapman & Hall; New York, Wiley & Sons: 16/6.

THE VASCULUM, 1917. Editor, Rev. J. E. Hull, Ninebank Vicarage, Whitfield, S.O., Northumberland. Quarterly publication; 4/- yearly. March 1917. Vegetation of Sea Sand, North Durham, Harold Jeffreys. Botanical Notes from Upper Teesdale, T. A. Lofthouse. The Genera *Orchis* and *Gymnadenia* in Durham, J. Heslop-Harrison.

VIERHAPPER, F. Beitrage zur Kenntnis der Flora Kretas. Oestr. Bot. Zeit. lxvi., 150-180, 1916.

WATSON BOTANICAL EXCHANGE CLUB, 1916-17. Hon. Secy., G. Goode.

WELLS' NATURAL HISTORY AND ARCHAEOLOGICAL REPORT for 1916 includes some additional localities to the Flora of Somerset. The specific names wrongly begin with a capital letter. One new adventitious plant, *Vicia macrocarpa*, is included.

WIJK, H. L. GERTH VAN. A DICTIONARY OF PLANT NAMES, vol. ii., index, pp. xxxiii., 1696; lge. 4to., M. Nijhoff, Hague, 1916.

WILCOX, EARLEY VERNON, A.M., Ph.D. TROPICAL AGRICULTURE. Appleton & Co., New York and London; 10/6.

WILSON, E. H. THE CONIFERS AND TAXADS OF JAPAN. Arnold Arboretum, Camb., Mass., pp. i.-xi., 1-99, t. 59, December 30, 1916.

OBITUARIES.

SARAH M. BAKER, D.Sc., aged 29, student of University College, London, graduating in 1909, taking her D.Sc. in 1913, Quain student for five years. A distinguished and most thorough worker in science, she contributed an important paper on the *Ecology and Biology of Brown Sea Weeds of the Salt Marsh* to the *Journ. Linn. Soc.* 325-380, 1916. At the time of her premature death she was investigating the bread-making value of flour substitutes. See *Nature* 329, 1917.

ROBERT BRAITHWAITE, M.D., F.L.S., &c., born at Ruswarp, near Whitby, Yorkshire, May 10, 1824, died in London, October 20, 1917. He studied for the medical profession, taking his M.R.C.S. at University College, London, in 1858, and his M.D. at St Andrews in 1865. He married Charlotte Elizabeth, daughter of N. B. Ward, F.R.S. He studied Mosses with great assiduity, and in 1880 issued the *Sphagnaceae or Peat Mosses of Europe and North America*, in which there is a history of the genus and descriptions of the species as well as 29 beautiful plates drawn by himself. In 1879 he began his monumental work, *The British Moss-Flora*, the first volume, *Acrocarpi*, pts. 1-10, appearing in 1887. It contained 225 species and 45 plates with 3000 figures. It has a copious synonymy, excellent descriptions and exquisitely drawn figures from his own pen. The second volume, *Acrocarpi*, pts. 11-16, is dated 1888-95, and volume iii. *Pleurocarpi*, pts. 17-23, 1896-1905. He also did many of the illustrations for Spruce's *Hepaticae of the Amazon and Andes*. He was admitted a Fellow of the Linnean Society in 1863, was Vice-President from 1889-91, became President of the Royal Microscopic Society in 1892, of the Quekett Club 1872-3, and of the Yorkshire Naturalists' Union in 1895. When at New York, the writer visited Bronx Park, and there Mrs Elizabeth Britton, the eminent bryologist, showed him one of their most recent and highly-treasured acquisitions, the herbarium of Mosses which Dr Braithwaite had made. There it will be most carefully preserved. See Memoir in *Naturalist* 361, 1917, with portrait.

Rev. WALTER BUTT, died suddenly at Oakwood, Chepstow, July 14, 1917, aged 67. Our late member was for many years the mainstay of the Cotswold Naturalists' Field Club, of which he was President. As such he pushed forward and interested himself greatly in the preparation of a Flora of the county, which is being compiled by his son-in-law, the Rev. H. J. Riddelsdell.

CHARLES THOMAS DRUERY, born in 1843, died at Acton, August 1917. A most enthusiastic Fern collector and cultivator, who covered himself with glory by the discovery of Apospory (see *Journ. Linn. Soc.* xxi., 354-360) on *Athyrium Filix-foemina*, var. *clarissima*. He was one of the oldest members of the British Pteridological Society, and had served as Secretary and President. He received the Victorian Medal of Honour, being one of the first sixty so honoured. In 1891 he published *Choice British Ferns*; in 1903, *Book of British Ferns*; and in 1910, *British Ferns and their Varieties*. (See *Rep. B.E.C.* 40, 1911.) These works he himself illustrated. Among the beautiful varieties he produced were the *superbum* section of the Lady Fern and the *gracillimum* forms of *Polystichum aculeatum*. He founded the *British Fern Gazette*, and in it, September 1917, there is a Memoir of him by F. W. Stansfield, with portrait. See *Gard. Chron.* 74, 1917, with portrait.

Sir EDWARD EVANS, D.L., J.P., born at Tranmere, Cheshire, June 26, 1846, died at Spital Old Hall, Bromborough, Cheshire, October 10, 1917. Educated at Wallace Hall, Dumfriesshire, he early entered the firm of Evans, Sons & Co., wholesale chemists, and in 1912 was President of the British Pharmaceutical Conference. He was a strong politician, and became Chairman of the Executive of the National Liberal Federation. In July 1906 he received the honour of knighthood, and in December 1909 he was presented with his portrait by the Liberals of Liverpool. On this occasion Mr Asquith said: "Sir Edward Evans has so comported himself and so conducted his private life as never for a moment to forfeit the esteem and respect even of his most bitter opponents." Sir F. E. Smith, Attorney General, a fellow townsman, in speaking of him said, that Liverpool was the poorer for the removal of a man of such honesty, courage and influence. Sir Edward had little time for the study of botany, but he was always a sympathiser with the part it played in the pharmacist's curriculum. His genial presence will be sadly missed from the gatherings of his clan.

WILLIAM FOGGITT, J.P., F.L.S., born at Yarm, February 2, 1835, died at Thirsk, May 10, aged 82. He was a well-known and greatly respected Yorkshire pharmacist, who, in his early years, collected 500 specimens of British plants. He was apprenticed to his father's business when he was 13, and became a great friend of John Gilbert Baker, with whom he continued his botanical rambles. His taste for natural science was inherited, four generations of his family having been botanists. Mr Baker and he founded the Thirsk Natural History Society. In 1864, after the disastrous fire at Mr Baker's house and premises, Mr Foggitt acted as Curator for the Botanical Exchange Club carried on at Thirsk till 1865. At this time Mr Baker left Thirsk for Kew, and the Club was afterwards carried on in London as the London Botanical Exchange Club. Mr Foggitt, for many years, gave weekly botanical lessons at Thirsk High School. He was elected a Fellow of the Linnean Society in 1903, was a Justice of the Peace for North Riding, an Hon. Member of the Scarborough Natural History Society, and a Life Member of our fore-runner, the London Botanical Society. See Memoir in *Naturalist* 206, 1917, with portrait. Mr Foggitt's large family of five sons and three daughters survive, and sincere sympathy is offered to our member, Mr T. J. Foggitt, on the loss of his father.

Lieut. ALAN GORDON HARPER, R.F.A., born at Bromley, Kent, January 5, 1889, killed instantaneously in action on the Western front, June 1, 1917. Educated at Dulwich, he gained an open scholarship at Magdalen College, Oxford, in 1908. In 1912 he took honours in Botany and afterwards the Diploma in Rural Economy. He became Demonstrator in that school at Oxford, having previously acted as assistant to the Professor of Botany at Bangor. He was afterwards Professor of Botany at Madras, and in his absence from England was awarded the degrees of M.A. and B.Sc., Oxon. He was a delightful companion, with winning manners and keen intellect. These gifts stood him in special stead in Madras, where he got the best work out of his pupils. Many of them had a love of study for itself, and this led to mutual liking and confidence. His B.Sc. degree was earned by his work on *The Destructive Effects on Timber by the Saw-fly, Namatus Erichsoni* (see *Annals of Botany*, 1913). His other publications include *Protomorphic Shoots in the Genus Pinus*, *Experiments on Eccentric Growth in Ash* (with Professor Somerville), *Fusion of Needles in Pinus*, and *Studies in the Formation of Autumn Wood in Coniferae.* As soon as the war broke out his eager spirit chafed at the curb, and although there were great temptations to remain in India (not the least being the chance of a botanical excursion to the Himalayas) he had the diviner call, for he had not only the joy of life but the chivalrous instinct to offer that life on the altar of his country. He wrote home shortly after the war began, saying: "Danger is not a factor with which I or any man reckons: the world can get on all right with a botanical professor the less. And when the men come home and you cheer them from the windows you would give a good deal for me to have earned the same honour as they—and their dead. . . . If I were useless and untrained I would not feel so bad . . . and I hear that regiments get cut up because we are short of men—how do you think I should feel shooting duck or tiger in India? No, it is up to me to help to clear Belgium of its invaders. I feel that it is a matter of national honour to send the best men we have for a work like that. In the old days it was always the gentlemen who fought, especially in such a cause. Don't think I am forgetting my duty to you; but remember how many of our men will have to be married men and only sons. . . . I am not a bread-winner, nor a father. I shall be sad to have to give up my trip to the Himalayas. It will be the greatest sacrifice I have ever made, but it seems to be a choice between selfish pleasure and the honour of one who has been generously brought up. It is a gamble for very high stakes. On the one hand is enjoyment of comfort together, please God: on the other, honour and pride, such as you wont have a chance of feeling again. The comfort will bring you some sense of shame in the future, while the honour can, at the worst, mean that a son has died creditably." Early in 1915 he had obtained his commission. He fought in France, was wounded at Longueval, sent home, in a couple of months was back with a field battery at Messines, and met his death, as his Commanding Officer says, "while carrying out his duty in the most gallant way under very trying conditions." Thus he died, as he would have wished, and, losing all, has "gained the civic crown of that eternal town. wherein he passed a rightful citizen of the bright commonwealth ablaze beyond our ken."

RUTH HOLDEN, born at Attleborough, Mass., 1890, graduated M.A. at Harvard in 1912, died at Moscow from meningitis, April 21, 1917. Post-graduate at Newnham, Cambridge. She was a distinguished botanical palaeontologist, who gave her life as a nurse for the Allies. See *Nature* 249, 1917.

SAMUEL MARGERISON, born at Calverley, 1857, died at Leeds, June 8, 1917. aged 60, buried in Calverley Church. Mr Margerison was a timber merchant, specialising in English Oak. He was Vice-President of the British Timber Trade Association, and was an expert forester. He assisted in the afforestation of the district in the Upper Washburn surrounding the Leeds Waterworks reservoirs of Fewston and Swinsty. His own trade, however, did not entirely occupy his time, for he was an excellent all-round naturalist, and his alpine garden was well stored with rarities. His beautiful home, the Grey Gables, at Calverley, which he designed himself and decorated with his own hand, was filled with oak-panelling, much of it historic. He also helped to design the Botanical Garden at Lister Park, Bradford. His antiquarian researches led him to publish three volumes of parish registers of Calverley. In Knipe Wood, Kettlewell, he found in 1909 a curious hybrid rose of the *spinosissima* group, with perhaps *R. dumetorum* as the other parent, which Major Wolley-Dod named after him, forma *Margerisoni*. (See *Rep. B.E.C.* 90, 1911.) He sent the writer sadly withered specimens which were distributed through the Club in that year. Mr Barclay considered the other parent of the rose to be *tomentosa*. See Memoir by H. E. W. in *Naturalist* 236, 1917.

GEORGE EDWARD MASSEE, born at Scampston, E. Yorkshire, 1850, buried on February 21, 1917, at Richmond, Surrey. Massee was the son of a farmer on the estate of our member, Mr W. H. St Quintin. There they "failed to educate him at a private school," and he did ordinary routine work on a farm, and then went to the York School of Art, where he gained the National Medal for the year. At York he received the benefit of instruction in botany from a relative on his mother's side, the renowned explorer of the Amazon, Dr Spruce, on whose suggestion Massee went to the West Indies and South America to study plants and collect Orchids. Of these he sent home many fine examples. In 1885 he returned to Scampston and did some of the beautiful plates for Spruce's *Hepaticae of the Amazon and Andes.* On his father's death he went to Kew, and in 1893 was appointed, on Dr M. C. Cooke's retirement, to the head of the Mycological Department. There he spent over twenty years elucidating one after another of the problems connected with fungoid diseases, book after book written in a clear and cogent style issuing from his pen. His output was enormous, numbering it is said 250 books and papers. Among these are 4 vols. of the *British Fungus Flora* : *A Monograph of the Myxogastres* ; *Text Book of Plant Diseases*, 1899 ; *Diseases of Cultivated Plants and Trees*, 1910 ; *European Agaricaceae*, 1902 ; *British Fungi and Lichens*, 1911 ; and *British Mildews, Rusts, and Smuts*, 1913. In Oxford we owe him a debt of gratitude for identifying the printings of Fungi which are from the brush of Dillenius, and which form the types of those described by him in Ray's *Synopsis.* See *Naturalist*, *Gard. Chron.* 91, with portrait, and *Nature*, March 1, 1917.

John Platts, born 1852, died suddenly at Oxford, April 23, 1917, aged 65 years. By his death our Society loses a very warm sympathiser, for, although not a collecting botanist, he had a high idea of the value of field botany as a training influence for those engaged in the medical profession. One of his last acts was to give a donation towards the *Report.* In his memory his sister had endowed a bed in the Royal Leicestershire Infirmary, and she has also kindly contributed towards our Benevolent Fund. He was almost the oldest friend of the writer, who was just setting out from his hotel to pay his customary call on him, when he succumbed to heart failure. The number of sympathetic letters from all classes sent to the firm of wholesale druggists, Southall, Son & Barclay, with whom Mr Platts had been connected for 45 years, was a convincing proof of his sterling qualities and kindly disposition.

Harry Sanderson, born at Galashiels, March 2, 1871, killed in action on the Western front, April 23, 1917. He was the son of

Mr R. Sanderson of Knowe Park, Galashiels. He was formerly a partner in the firm of tweed manufacturers, P. & R. Sanderson, of Galashiels, and was a cousin of our member, Miss I. M. Hayward. He had a great love for horticulture, and had a beautiful garden full of rare alpines at Eastmount, Galashiels. Many of these alpines he had himself collected not only in the Italian Alps and Switzerland but also in Bosnia and Montenegro. It will be remembered that he succeeded in hybridising *Saxifraga granulata* with *cernua*. Although over military age and married, he enlisted as a private in Lord Lovat's Horse Artillery, and, rapidly rising to the rank of Captain, he commanded his battery in the battle of the Somme, where he was wounded. He was keenly interested in local matters, in which he took a prominent part. Our deep sympathy is extended to his widow, Mrs Sanderson. The Society loses a valued member, who was always willing to assist in experimental work. His portrait is given in *Gard. Chron.* 207, 1917, and an appreciation by Mr H. J. Elwes on p. 197.

WORTHINGTON G. SMITH, born March 23, 1835, died at Dunstable, October 27, 1917. He commenced life as an architect, but in 1858 abandoned that profession to pursue wood and lithographic engraving, arts in which he greatly excelled, the pages of the *Gardeners' Chronicle* being enriched for many years with his life-like drawings. His magnificent portrait of Miles Berkeley, which appeared in it (135, 1889), showed an extremely high order of portraiture, in which the innate nobility and massive intelligence of the great Fungologist were splendidly depicted. Smith himself was a keen lover of Fungi. He was a regular attendant at the meetings of the Woolhope Club, gave most racy accounts of the meetings, illuminated the menu cards with instances of his rollickling fun and good-humoured caricature, and was the life and soul of many pleasant excursions. He was also an antiquarian of no mean order. He contributed important articles to the *Victoria County History of Bedfordshire*, and wrote an excellent work, *Man, the Primeval Savage.* In 1884 he issued a companion volume to Berkeley's *Outlines of British Fungi.* In 1908 a Synopsis of British Basidiomycetes, entitled *Diseases of Field and Garden Crops*, was published by the Trustees of the British Museum. In 1865 he got the Royal Horticultural Society's Gold Medal, and in 1873 the Silver Medal from the Horticultural Society of Ireland. In

1874 the Woolhope Club presented him with a box of silver plate. In 1875 he was awarded the Gold Knightian Medal for his researches into the potato disease. In 1903 he was elected President of the British Mycological Society, and the same year the borough of Dunstable made him their first freeman. In 1907 he was awarded the gold Veitchian medal. In 1902 the writer was among those who pressed his claims upon the First Lord of the Treasury, and he was awarded a pension from the Civil List of £50, a sum which he had well earned, though science and art receive little state recognition. He designed the cover for the *Midland Naturalist*, which was issued in 1878, and gave a descriptive account of it. In included sketches of the Mammoth, the Red Deer, the Cromlech at Clynnog in Carnarvonshire, Scientific Instruments, the Bee, *Bombax terrestris*, the Wild Rose, the Cowslip, the Rhizopod, *Actinophrys Eichornii*, Ferns, Fungi, the Apteryx, Octopus and Ichthyosaurus. As he states, the design was drawn direct on a box-wood block, and engraved at once without a slip, false line or alteration. "Many readers," he goes on to say, "of the *Midland Naturalist* will, probably, be self-taught men, who busily follow industrial occupations every week-day. It may, therefore, interest such readers to know that the writer of these lines never had any teacher, either artistic or scientific, other than he always found supplied to him by close observation, careful reading, experience and constant perseverance." See *Gardeners' Chronicle*, p. 160, with a portrait and one of his own humorous sketches, and *Nature* 191, 1917.

NEW COUNTY AND OTHER RECORDS.

Abbreviations.—*Fern Gaz.* = *The British Fern Gazette*, edited by F. W. Stansfield : *Gard. Chron.* = *The Gardeners' Chronicle* : *Hiern Rep.* = *Devon Soc. Science, &c., Report* : *Ir. Nat.* = *The Irish Naturalist* : *Nat.* = *The Naturalist* : *Ridge Rep.* = *Report of North Staffordshire Field Club* : *Stratton* = *Herbarium of F. Stratton* in *Hb. Druce* : Woodall Spa = Plants gathered by the Rev. F. Alston at Tower-le-Moor Fowl-farm near Woodhall Spa, Lincoln, det. by Dr Thellung or the compiler : † = Adventive ; * = New County Record (in the case of adventive plants this is only rarely added) ; ! placed after a plant name signifies that the compiler has seen the specimen ; ! placed after a locality that the compiler has seen it there; × placed before one or between two scientific names means that the plant is a hybrid; 52, etc., numbers following a county refers to the Watsonian vice-county; [ ] enclosing a record means that confirmatory evidence is needed.

3. THALICTRUM FLAVUM L., var. RUFINERVE (Lej. & Court.). Billingham, Durham, HARRISON.

16. ADONIS ANNUA L. Near Wilsford, S. Wilts (already on record), Hon. Mrs INGILBY.

20. RANUNCULUS STEVENI Andr. Bodorgan, Anglesey, DRUCE.

†31. R. MURICATUS L. Meanwood, Leeds, HORRELL.

37. R. CIRCINATUS Sibth. Thaeka Beck, Penrith, Cumberland, 1917, J. C. VARTRY-SMITH, in *lit.*

41 (2). R. SPHAEROSPERMOS Boiss. & Blanch. In a clear running stream near Mundham, W. Sussex, DRUCE and BURDON. Good typical specimens.

47. R. FICARIA L., var. SINUATA Horw. Near Southampton, S. Hants, VIGURS, in *lit.*

55. NIGELLA DAMASCENA L. Waste ground, Exeter, S. Devon, M. COBBE.

†63. DELPHINIUM CONSOLIDA L. Woodhall Spa, ALSTON.

68. ACONITUM NAPELLUS L. By stream at Bushey, Corfe Castle, Dorset, 1916, GREEN.

†79. PAPAVER SOMNIFERUM L., var. SETIGERUM (DC.). Par, Cornwall, 1917, M. COBBE. The type at Isallt, Anglesey, and Llanfairfechan, Carnarvon, DRUCE.

80. P. RHOEAS L., var. STRIGOSUM Boenn. Saunton, N. Devon, M. COBBE. The sap, however, is said to be yellow, so it is probably the var. *Chelidonoides* Kuntze. Var. PRYORII Druce. Par, Cornwall, M. COBBE.

84. P. HYBRIDUM L. Saunton, N. Devon, M. COBBE; Wilstone, S. Wilts., abundant, DRUCE. Already recorded for both 4 and 8.

†88. MECONOPSIS CAMBRICA Vig. Dunstone, Staffordshire, *Ridge Rep.*

†90. GLAUCIUM CORNICULATUM Curt. Woodhall Spa, ALSTON.

†102. CAPNOIDES CLAVICULATA (L.) Druce. The Glen, Peebles! Lady GLENCONNER. In some quantity and native.

107. FUMARIA BORAEI × OFFICINALIS. Near Wareham, along with F. OFFICINALIS, var. WIRTGENI, GREEN.

†116. MATHIOLA INCANA Br. Cliffs, Budleigh Salterton, S. Devon, quite naturalised, M. COBBE and DRUCE. Seen there also by GARDNER and GREEN.

124. RADICULA SYLVESTRIS Druce. Near Lyndhurst, S. Hants, DRUCE; Gower, Glamorgan, Miss VACHELL; Otterton, Devon, GARDNER and GREEN; Patshull, Staffs., 1917, ! Lady J. LEGGE'S SCOUTS. Sine pers. auth. in *Top. Bot.*

129. BARBAREA VULGARIS Br., var. ARCUATA. Wimborne, Dorset, 1916, GREEN.

†157. ALYSSUM INCANUM L. Guildford, Surrey, Lady VICTORIA RUSSELL; Woodhall Spa, ALSTON.

†158. A. MARITIMUM Lam. Woodhall Spa, ALSTON; Northampton Race Course, GOODE.

†177. WILCKIA MARITIMA Scop. (MALCOMIA). Scarborough Mere, 1916, HORRELL; Poole, Dorset, 1917, GREEN; Ardley, Oxon., 1910, DRUCE; Guildford, Surrey, KENNEDY.

†178. W. AFRICANA Muell. Kirkstall, York, 1916, HORRELL.

†183. SISYMBRIUM SOPHIA L. Par, Cornwall, 1910, DRUCE; 1917, M. COBBE; Ryde, Isle of Wight, 1867, STRATTON.

†184. S. ALTISSIMUM L. Ryde, Isle of Wight, 1867, STRATTON; Sudbury, Suffolk and Beddgelert, Carnarvon, DRUCE; Sandal, York,

and as a form with large petals, Kirkstall, York, Horrell; Woodhall Spa, Alston; Exmouth Docks, S. Devon, M. Cobbe.

†185. S. orientale L. Restington, W. Sussex, 1917, Gambier-Parry; Kirkstall, York, 1916, Horrell. Var. subhastatum (Willd.) Thell. Lynmouth, N. Devon, 1917, A. B. Cobbe. Var. stenocarpum (R. & F.). Cothill, Berks., 1906, Druce.

†187. S. Loeselii L. Sandal, York, 1916, Horrell.

189. S. officinale Scop., var. leiocarpum DC. Exmouth, S. Devon, M. Cobbe.

197. Erysimum cheiranthoides L. *Railway, Newport, Isle of Wight, 1914, Stratton; Exmouth, S. Devon, M. Cobbe.

†200. Conringia orientalis Dum. Par, Cornwall, 1910, Druce; 1917, A. B. Cobbe; Biddesden, Wilts, Druce; Poole, Wareham, Swanage, Green.

†202. Camelina sativa Crantz. Exmouth Docks, S. Devon, M. Cobbe; Swanage, Green. Var. foetida (Fr.). Oliver's Battery, *Winchester College Rep.*, 1917; Henham Park, Suffolk, Horwood.

†203. C. sylvestris Fr. Dean Clough, Halifax, York, 1916, Horrell.

†212. Brassica elongata Ehrh., var. persica (B. & H.). Par, Cornwall, and Exmouth Docks, S. Devon, M. Cobbe.

†218. B. juncea Coss. Par, Cornwall, and Exmouth Docks, M. Cobbe; Aldrington, Sussex, Hilton (as *balearica*) in *Hb. Druce*; Maidstone, Kent; Slough, Bucks., 1904; Biddesden, Wilts.; Portmadoc, Carnarvon; Botley, Oxon., Druce; Woodhall Spa, Alston; Galashiels, Selkirk, I. M. Hayward and Druce.

†224. B. incana F. Schultz. Near the Gasworks, Ilfracombe, N. Devon, M. Cobbe; still at Portmadoc, Carnarvon, 1917, Druce.

†228. Eruca sativa Mill. Par Harbour, Cornwall, M. Cobbe; Sibford, Oxon., Lamb.

232. Bursa pastoris Weber, var. densifolia (Mott). Holyhead, Anglesey, and Glen, Peebles, Druce.

†237 (2). Lepidium chalepense L., var. auriculatum (Boiss.). Par Sands, Cornwall, Rilstone.

†239. L. perfoliatum L. Par, Cornwall, M. Cobbe.

†240 (2). L. neglectum Thell. Swanage Camp Meadow, Dorset, 1917, Green, in *lit.*

*246. L. Smithii Hook., var. alatostylum (Towns). Stoborough, Dorset, 1915, Green.

†247. L. virginicum L. Exeter, S. Devon, A. B. Cobbe: Selkirk, 1917, I. M. Hayward and Druce.

†247 (4). L. densiflorum Schrad. Par, Cornwall, M. Cobbe; Atherstone, Warwick, Miss Bourne: Woodhall Spa, Alston; Welbeck, Notts., Goulding, vide sp.; Halifax, York, Horrell.

†247 (17). L. Schinzii Thell. Near Melrose, Roxburgh, Fraser: Meanwood, Leeds, Horrell.

250. Thalspi perfoliatum L. Near Prestwood, Bucks., H. T. White, in *lit.* Spec. not seen.

†258. Vogelia paniculata Hornem. Par, Cornwall and Exmouth, S. Devon, A. B. Cobbe; Welbeck, Notts., Goulding, vide sp.; Wilsford, Wilts., Druce: Elland, Halifax, and Leeds, Yorks., Horrell.

†260. Myagrum perfoliatum L. Morley, Yorks., F. Ashwell.

†261. Soria syriaca Desv.! Kirkstall, York, F. Pullan.

†262. Bunias Erucago L. Guildford, Surrey, R. M. Kennedy.

†266. Rapistrum perenne All. Woodhall Spa, Alston.

†267. R. orientale Crantz. Southampton, S. Hants., F. Rayner: Sandal, York, Horrell.

†268. R. rugosum All. Weston super-Mare, N. Somerset, Miss Todd; Buryport, Carmarthen, Druce.

269. R. LINNEANUM B. & R. Ventnor, Isle of Wight, STRATTON; Aldrington, Sussex, HILTON. Both in *Hb. Druce.*

†273. ERUCARIA MYAGROIDES Halac. Ruskington, Lincoln, WOODRUFFE-PEACOCK, vide sp.

†277. RAPHANUS SATIVUS L. Swanage Camp, Dorset, GREEN.

293. VIOLA SYLVESTRIS Kit., var. PUNCTATA Druce. Little Pan Copse, Isle of Wight, STRATTON.' F. ROSEA, Compton Abdale. E. Gloster, GREENWOOD.

295. V. RUPESTRIS Schmidt, var. GLABRESCENS. Cotswolds, Glostershire, 33 and 34, *Nature* 192, 1917, et Rev. H. J. RIDDELSDELL, in *lit.*

296. V. CANINA L. Only two localities given in *Fl. Dorset.* Common on downs above Dancing Ledge, also near Wool, DRUCE. Var. PUSILLA, Easton Broad, Suffolk, HORWOOD; Coleshill, Warwick, as FLAVICORNIS, BAGNALL in *Hb. Druce*; Dawlish Warren, S. Devon, GREEN and GARDNER. Var. SABULOSA, North Bull, Dublin, 1871, DYER, in *Hb. Druce.*

298. × V. SEPINCOLA Jord. Odiham, N. Hants., C. E. PALMER, in *Hb. Druce.*

299. V. HIRTA L., var. HIRSUTA Lange. Codicote, Herts, 1820, BLAKE, in *Hb. Druce.* F. LACTIFLORA. Bibury, E. Gloster, GREENWOOD. F. IMBERIS Greg. Sychtyn, Salop, 1869, JONES, in *Hb. Druce.*

300. V. CALCAREA Greg. Ballard Down, Dorset, GREEN.

301 (2). V. EPIPSILA Ledeb. Black Down Culm, DAVEY; N. Devon, 1872, STRATTON; and Black Mount, Belfast, 1866, G. DONALDSON, in *Hb. Druce*; Beddgelert, Aberglaslyn, and Cwm Meillionen, Carnarvon, with var. GLABRESCENS, DRUCE.

303. V. LLOYDII Jord. The scarce yellow-flowered form, Ambarrow, Berks., 1916, MONCKTON.

308. POLYGALA SERPYLLACEA Weihe, var. VINCOIDES Chodat. Colwell Heath, Isle of Wight, 1879, STRATTON.

310. P. OXYPTERA Reichb. (? P. DUBIA Bellynck). Near Dancing Ledge, Dorset, 1917, DRUCE and GREEN; Sutton Heath, Northants, CHESTER.

*318. DIANTHUS DELTOIDES L. Glen, Peebles, Lady GLENCONNER. This year a portion of grass in the park, which is usually mown, was allowed to grow, and amongst it there appeared beautiful specimens of the *Dianthus*, doubtless native.

†320. D. BARBATUS L. Naturalised on railway bank, Mardock, Herts., 1917, HIGGENS.

†331. SAPONARIA VACCARIA L. Swanage, Dorset, GREEN: Atherstone, Warwick, Miss BOURNE; Winscombe, Somerset, LAMB.

†339. SILENE CONOIDEA L. Kirkstall, York, 1916, HORRELL.

340. S. NOCTIFLORA L. Wimborne and Swanage, Dorset, GREEN: Otterton, Devon, GARDNER and GREEN.

†341. S. DICHOTOMA Ehrh. Cirencester, E. Gloster, GREENWOOD.

341 (2). S. CRETICA L. On clover at Godlingstone, Dorset, 1916, GREEN.

†342. S. GALLICA L. Saunton, N. Devon, M. COBBE.

†345. S. PENDULA L. Par Harbour, Cornwall, and Exmouth Docks, S. Devon, M. COBBE.

†347. S. ARMERIA L. Botley, Oxon, GAMBIER-PARRY.

354. S. NUTANS L. Ballard Head Cliff, Dorset, GREEN.

†367 (2). CERASTIUM TOMENTOSUM L. Waste ground, Poole, Dorset, GREEN.

372. C. PUMILUM Curt. Given without locality in *Fl. Dorset.* Mr C. B. Green found it in the Quarries, Swanage, in 1912, and I saw it in two places—one near Langton Matravers, the other above Dancing Ledge, in 1917.

380. STELLARIA NEGLECTA Weihe. Near Druce, Dorset, 1917, DRUCE. Var. DECIPIENS Marsh. Side of Loch Fithie, Forfar, 1916, DRUCE.

*382. S. Dilleniana Moench, var. palustris Druce. Patshull, Staffs., Lady J. Legge's Scouts!

*406. Sagina apetala Ard. The Glen, Peebles, Druce.

*406 (2). S. Reuteri Lange. Storrington, Sussex, Miss Todd.

411. Spergularia rupestris Lebel. Cliffs, S. of Lulworth Cove, Dorset, Green.

412. S. media Presl, var. glandulosa Druce. Blythburgh, E. Suffolk, Horwood.

†419. Claytonia perfoliata Donn. Schoolhouse Garden, Uppingham, 1882, Bishop Mitchinson.

423. Elatine Hydropiper L. Mortimer, Berks., Rev. E. C. Crutwell. A most interesting record, as it is to be feared that military manœuvres have destroyed it at Sandhurst.

†426. Hypericum hircinum L. Hythe, 1880, Bishop Mitchinson, in *Hb. Druce.* This supplies a definite locality for Kent.

433. H. undulatum Schousb. Precelly Mountains, Pembroke, 1917, Arnett.

437. H. humifusum L., near var. ambiguum Gill., but sepals are less glandular and the flowers seem smaller, teste Pugsley. The Lizard, Cornwall, Lady Davy. The var. is already recorded for Cornwall.

442. Althaea officinalis L. Still at Muddiford, S. Hants., Gardner and Green.

†447. Lavatera thuringiaca L.! Hayle, Cornwall, 1917, Rilstone.

†452 (2). Malva nicaeensis All.! Guildford, Kennedy, vide sp.; Meanwood, Leeds; Mirfield, Yorks., Horrell.

†454. M. pusilla With. Wytham, Berks, Druce; Bradford, Cryer; Kirkstall, Tingley, York, Horrell; Woodhall Spa, Alston; Goathorn, Swanage, Dorset, Green; Pye Hall Farm, E. Suffolk, Horwood.

†456. M. PARVIFLORA L. Ware, Herts, DRUCE; Guildford, KENNEDY, vide sp.; Meanwood, Leeds, HORRELL.

469. LINUM PERENNE L. = L. ANGLICUM Mill. This is bracketed for Kirkcudbright in *Top. Bot.* In *Fl. Dumfries* it is said to be an escape (whence?). S. Arnott (*Gard. Chron.* ii., 192, 1917) says: "In a certain bay on the Kirkcudbright coast there is a beautiful colony, giving the portion of the coast on which it grows a feature reminding one of the haze of blue shown in many a woodland and meadow by the flowers of the blue bell. It has formed one of the prominent features in some of the pictures of a famous Scotch artist." In this bay where rabbits abound they do not touch the flax, yet when transplanted to the Cumbrian coast it is greedily devoured.

†479. GERANIUM PHAEUM L. Patshull, Staffs., Lady J. LEGGE'S SCOUTS!

†479 (2). G. ENDRESSII Gay. Landkey, Devon, *Hiern Rep.*

488. G. PURPUREUM Forst. Swanage, Dorset, GREEN, whence Sherard recorded it.

†490 (2). ERODIUM BOTRYS Bert.! var. In a mangold field, Edenbridge, Kent, with other species, TALBOT.

†494. E. MOSCHATUM Ait.! Edenbridge, Kent, with above, TALBOT.

†499. E. CYGNORUM Nees.! Edenbridge, Kent, with above, TALBOT, vide sp.

†506. OXALIS STRICTA L. Wick Hill, Finchampstead, Berks., 1917, MONCKTON.

†510. IMPATIENS GLANDULIFERA Royle. On the banks of the Taw in great plenty for some miles below South Molton Road Station, N. Devon,! M. COBBE.

†519 (2). RHAMNUS ALATERNUS L. Hedge, Pan Down, Isle of Wight, 1893, STRATTON.

†520. STAPHYLEA PINNATA L. and †525. ACER PLATANOIDES L. are both reported from Leyburn, York, in the *Nat.*

†529. LUPINUS ANGUSTIFOLIUS L. Cultivated near Wrentham, Suffolk, HORWOOD.

†531. LABURNUM ANAGYROIDES Med. Seeding freely at 800 feet at Glen, Peebles, where it was planted by the late Sir CHARLES TENNANT.

543. ONONIS REPENS L., var. HORRIDA Lange, and f. ALBA. St. Helens Spit, Isle of Wight, GARDNER and GREEN.

547. TRIGONELLA M. ORNITHOPODIOIDES (L.), new to district 3. Par, Cornwall, M. COBBE.

†548. T. FOENUM-GRAECUM L. Welbeck, Notts., GOULDING, vide sp.

†549. T. GLADIATA Stev. Bristol, W. Gloster, EVANS, ex I. M. ROPER.

†550. T. POLYCERATA L.! Wakefield and Dean Clough, Halifax, 1916, HORRELL.

†553. T. AZUREA C. A. Meyer. Aglerigg, York, PULLAN.

†562. MEDICAGO FALCATA L., var. TENUIFOLIOLATA Vuyck. Wall-top by canal, Exeter, S. Devon, M. COBBE; Woodhall Spa, ALSTON; fowl-run, Naphill, Bucks., DRUCE; Elland, York, HORRELL.

563. M. SYLVESTRIS Fries. Kingston-on-Sea, Sussex, with *Falcata* and *sativa*, WEBSTER.

†567. M. SCUTELLATA Mill. Dean Clough, Halifax, 1916, HORRELL.

†574. M. TUBERCULATA Willd. Dean Clough, Halifax, HORRELL.

†579. M. APICULATA Willd. St. Philip's, Bristol, DRUCE and M. COBBE; Guildford, Surrey, KENNEDY.

580. M. ARABICA Huds. Abingdon, Berks.; Portmadoc, Carnarvon, new to 3, DRUCE.

581. M. MINIMA Desr., var. RECTA Burnat. Rye, Sussex, WALLIS, ex SALMON.

†582. M. laciniata Mill. Bradford, York, Cryer; Meanwood, Leeds, 1916, Horrell.

†590. Melilotus sicula (Turra) Ind. Kew. = M. messanensis Desv. Guildford, Surrey, Kennedy, vide sp.

†595. M. alba Desr. Guildford, Kennedy; Exmouth, S. Devon, M. Cobbe; *Winchester Rep.* 1917: Woodhall Spa, Alston.

†597. M. indica All. Exmouth, S. Devon, M. Cobbe; Swanage and Studland, Dorset, 1917, Green; Guildford, Surrey, Kennedy; Wrentham, W. Suffolk, Horwood; Portmadoc, Carnarvon, Druce.

599. Trifolium pratense L., var. parviflorum Bab. Near Par, Cornwall, M. Cobbe; Worthing, Sussex, Miss Todd.

†605. T. lappaceum L.! Dean Clough, Halifax; Elland and Sandal, York, Horrell.

611. T. arvense L., var. strictius Koch. Frodsham, Cheshire, 1866, J. F. Robinson; Ruckley, Salop, 1838, Bidwell, both in *Hb. Druce.*

614. T. maritimum Huds. North side of Poole Harbour, Dorset, 1914 (recorded from that area by Pulteney, but thought to be extinct), Green.

†615 (2). T. diffusum Willd. Roadside between Studland and Corfe Castle, Dorset, Green. Det. Kew.

†616. T. echinatum M. Bieb. (supinum Savi). Kirkstall, York, Pullan.

†623. T. tomentosum L. Abingdon, Berks., Gambier-Parry, vide sp.

†625. T. spumosum L. St. Philip's, Bristol, A. B. Cobbe; Dean Clough, Halifax, 1916, Horrell.

646. Lotus uliginosus Schukhr, var. glaber Bréb. Lytchett, 904, Druce; Parkstone Ridge, etc., Dorset, 1917, Green.

†651. Galega officinalis L. Finchampstead Ridge, Berks., 917, Monckton.

†666. CORONILLA VARIA L. Newmarket, Cambridge, ADAIR; Woodhall Spa, ALSTON; Loanhead, Edinburgh, FRASER, *l.c.*

†667. C. SCORPIOIDES Koch. Bristol, W. Gloster, Mrs SANDWITH; Welbeck, Notts., GOULDING; Elland, York, ! HORRELL.

†678. VICIA TENUIFOLIA Roth. In a hedge by a corn-field near Hunston, Sussex! BURDON (there for some time, and quite naturalised); Falmouth Docks, Cornwall, A. B. COBBE.

†683. V. VARIA Host.! Aldrington, Sussex, HILTON; Scarborough Mere, York, HORRELL.

†684. V. PSEUDO-CRACCA Bert. Dean Clough, Halifax; Elland, York, HORRELL.

687. V. BITHYNICA L. Near Canterbury, Kent (new to dist. 7), ASSHETON.

688. V. SEPIUM L., var. nov. INSIGNIS (floribus majoribus et rubrioribus). Wangford, W. Suffolk, HORWOOD, in *lit.*

†690. V. NARBONENSIS L.! Dean Clough, Halifax; Elland, York, HORRELL.

†692. V. HYBRIDA L. Dean Clough, Halifax, HORRELL.

†694. V. PANNONICA Crantz. Pye Hall Farm, E. Suffolk, HORWOOD.

*698. V. ANGUSTIFOLIA (L.) Reichb. Glen, Peebles, DRUCE.

*705. V. TETRASPERMA Moench. Dirleton, Haddington, FRASER, in *Rep. Bot. Soc. Edin.*, 405, 1918.

†706. V. GRACILIS Lois.! Among corn, Sibford, Oxford, LAMB; Panfield Cliffs, Seacombe Cliffs, Worth, Gadcliffe, Dorset, GREEN. The correct name, teste Thellung, is *V. tenuissimum* (Pers.).

710. LATHYRUS SYLVESTRIS L., var. LATIFOLIUS Peterm. Copse above Kerne, Isle of Wight, 1872, STRATTON, in *Hb. Druce.*

†721. L. CICERA L. Par Harbour, Cornwall, A. B. COBBE.

†722. L. SATIVUS L. Corn-siftings, Bristol, W. Gloster, I. M. ROPER.

726. L. APHACA L. Corn field, Cirencester, E. Gloster, GREENWOOD. Lacks personal authority in *Top. Bot.*

†736. PRUNUS PADUS L. Wool, DRUCE; Stoborough, Wareham, GREEN. Doubtless planted.

†745 (3). SPIRAEA DOUGLASII Hook.! Rough ground, old clay pits, Creech, Dorset, 1917, GREEN; Ashton le-Mersey, Cheshire, 1916, J. S. GALE.

†745 (4). S. BUMALDI Hort. A garden escape, Beddgelert, Carnarvon, 1917, DRUCE.

749. RUBUS FISSUS Lindl. and 750. R. NESSENSIS And. Benacre, E. Suffolk, HORWOOD.

776. R. MERCICUS Bagn. Near Milton, S. Hants., 1917, CUMMING.

784. R. THYRSOIDEUS Wimm. South Cave, E. Suffolk, HORWOOD.

*822. R. LEYANUS Rogers. Near Milton, S. Hants., CUMMING.

883. GEUM RIVALE L. A curious monstrosity, in which a single flower, with many series of petals of a deep crimson colour, is sessile on the top of the stem among a circle of bract-like leaves, was found by Mr W. H. St. Quintin on Tees-side. It is similar to, but much taller than the Caenlochan plant alluded to in *Rep. B.E.C.* 483, 1916.

†885. FRAGARIA MOSCHATA Duchesne. Near Symond's Yat, Hereford, 1917, Miss TODD. The plant from Haslemere, Surrey (*Rep. B.E.C.* 483), is *F. virginiana.*

†895. POTENTILLA ARGENTEA L. Woodhall Spa, ALSTON.

896. P. INTERMEDIA L. Woodhall Spa, ALSTON; Northampton, GOODE; Wellington College Station, Berks., MONCKTON.

903. P. ERECTA Hampe, var. SCIAPHILA (Zimm.) Druce. Holyhead, Anglesey, 1917, DRUCE.

906. P. NORVEGICA L. Northampton Race Course, GOODE.

*909. ALCHEMILLA MINOR Huds. Glen, Peebles, DRUCE; Patshull, Staffs., Lady J. LEGGE'S SCOUTS.

*909. A. ALPESTRIS Schmidt. Glen, Peebles, DRUCE.

914. AGRIMONIA ODORATA Mill. Near Wilsford, Wilts., abundant, DRUCE and S. TENNANT; Biddesden, Wilts., and Appleshaw, N. Hants., Hon. Mrs G. BARING and DRUCE; Arne Woodland, etc., Dorset, GREEN.

923. ROSA GALLICOIDES Déségl. Chesterton Wood, Warwick, as *R. systyla*, H. BROMWICH in *Hb. Druce*, teste WOLLEY-DOD; Solihull, Warwick, 1871, J. BAGNALL.

*927 (3). R. STENOCARPA Déségl. Symond's Yat, W. Gloster, Miss TODD.

932. R. HEMITRICHA Rip. Richmond, York, 1870, J. WARD, as *arvatica*.

*932. R. RAMEALIS Puget. Naphill, Bucks., 1917, DRUCE. The best British example as yet seen by Wolley-Dod.

*937. R. APRICORUM Rip. Glen, Peebles, DRUCE. It seems quite native in the county.

*941. R. PSEUDO-RUBIGINOSA Ley. Glen, Peebles, DRUCE.

*943. R. VILLOSA L., var. CAERULEA (Woods). Bodorgan, Anglesey, DRUCE.

945. R. CORONATA Crép. Chesterton, Warwick, 1867, H. BROMWICH in *Hb. Druce*.

957. PYRUS AUCUPARIA Ehrh., var. FLAVA Druce. Glen, Peebles, DRUCE.

963. P. TORMINALIS Ehrh. Near Oxwich, Glamorgan, 1917, Miss VACHELL. No personal authority in *Top. Bot.*

†964 (2). P. CYDONIA L. Farley Wood, Winchester, S. Hants., 1878, STRATTON in *Hb. Druce*.

966. CRATAEGUS MONOGYNA Jacq., var. SPLENDENS Druce. Plants near this—Thegdon Bois, S. Essex, GROVES; Southampton Common, S. Hants., 1917, VIGURS. Var. PTERIDIFOLIA Loudon. Asthaly, Oxon, 1917, DRUCE. Var. QUERCIFOLIA Booth. Biddesden, S. Wilts.; N. Hants.; Traquair, Peebles; Portmadoc, Carnarvon, DRUCE.

†970 (2). C. CRUS-GALLI L. Plentiful in hedges about Moreton, Dorset, ! 1917, Lieut. T. H. LEACH.

†972. COTONEASTER MICROPHYLLA Wallich. Babbicombe, S. Devon, 1914, STRATTON; Brading Down, Isle of Wight, thoroughly naturalised, R. M. CARDEW in *lit.*

*1000. PARNASSIA PALUSTRIS L. Glen, Peebles, 1917, Lady GLENCONNER.

1010. SEDUM PURPUREUM Link. Hunters Inn, S. Devon, M. COBBE.

†1012. S. REFLEXUM L., var. ALBESCENS (Haw.) Near Lilliput Pier, Dorset, 1916, GREEN.

†1016. S. ALBUM L. Peebles, DRUCE.

*1047. EPILOBIUM HIRSUTUM × PALUSTRE. Alphington, S. Devon, 1916, HIERN.

*1052. E. ROSEUM Schreb. Galashiels, Selkirk, 1917, I. M. HAYWARD and DRUCE.

1054. E. MONTANUM × ROSEUM. Baildon, York, 1917, CRYER.

1059. LUDVIGIA APETALA Walt. Still in the New Forest, S. Hants., 1917, DRUCE.

†1061. OENOTHERA BIENNIS L., var. SUAVEOLENS (Desf.). Railway, Northampton, 1875, DRUCE.

†1064. OE. LAMARCKIANA Ser. Ilfracombé, and plentiful by the railway between Lynton and Woody Bay Station, N. Devon, 1917, A. B. COBBE: near Lilliput Pier, and North Haven, Poole Harbour, Dorset, 1916, GREEN.

†1065. OE. ODORATA Jacq. Dawlish Warren, S. Devon, M. COBBE.

†1071. FUCHSIA RICCARTONI Hort. In a wood, well established, Lynton, N. Devon, REDGRAVE.

†1074. MENTZELIA ALBICAULIS Dougl. Bristol, W. Gloster, Mrs SANDWITH, teste THELLUNG.

†1082. ASTRANTIA MAJOR L., var. INVOLUCRATA Koch. Wood, Linlithgowshire, J. H. MARTIN.

†1090. BUPLEURUM ROTUNDIFOLIUM L. Waste ground, Ellacombe, S. Devon, 1914, STRATTON.

†1091. B. LANCIFOLIUM Hornem. 1813 (PROTRACTUM H. & L. 1820). Tywardreath, Cornwall, A. B. COBBE; Dean Clough, Halifax, 1916, HORRELL; roadside, near Patshull, Staffs., Lady J. LEGGE's SCOUTS!

†1095. B. CROCEUM Fenzl. Groby, Leicester, 1916, R. EVERARD, ex HORWOOD.

1114. PIMPINELLA SAXIFRAGA L., var. POTERIIFOLIA Wallr. Isallt, Anglesey, 1917, and as forma NANA mihi. Plants about 2 inches high. The type on the Clogwyn, Carnarvonshire, at 2300 feet. DRUCE.

†1125. SCANDIX IBERICA M. Bieb. Botley, Oxon; St Philip's, Bristol, 1916, DRUCE.

1126. ANTHRISCUS SYLVESTRIS Hoffm., var. ANGUSTISECTA Druce. Traquair, Peebles; Galashiels, Selkirk; near the Tweed, Galashiels, Roxburgh, DRUCE. Var. LATISECTA Druce. Madeley, Staffs.! H. DALTRY and DRUCE; Wool and Worth, Dorset; Lyndhurst, S. Hants.; Biddesden, N. Hants.; Wilsford, S. Wilts.; Bradfield, Berks.; Bradenham, Bucks.; Stansteadbury, Herts.; Kirkby-le-Soken, Essex; near Rye House, S. Essex; Whittlebury, Northants., DRUCE. Mr F. N. Williams directs my attention to the altitude (585 metres) at which this species grows in the Galtee mountains, Tipperary, and to the statement (Baker and Tate *Fl. Durham* 182) that Mr Baker had found a form with deep green, nearly naked leaves with narrow divisions on the limestone scars in Harwood Dale, Durham. This is probably the var. *angustisecta*.

†1128. A. CEREFOLIUM Hoffm. ! Between Truro and Malpas, Cornwall, A. B. COBBE.

1150. PEUCEDANUM OFFICINALE L. In good quantity on the Naze near Kirby-le-Soken, N. Essex. Long ago recorded from the Naze Estuary. In most British Floras, *e.g.* Babington, Boswell-Syme and Hooker, the habitat is given as "Salt Marshes." This is not quite accurate. *Peucedanum* shows its handsome tufts of dark green, finely divided leaves on the sloping sea walls, or on the edges and slopes of clay banks near the sea and its estuaries. It does not grow in the wet marshes.

†1153. HERACLEUM VILLOSUM Fisch. Abingdon, Berks., DRUCE.

†1157. CORIANDRUM SATIVUM L. Ware, Herts., 1917, DRUCE.

†1159. ANIDRUM TESTICULATUM Kuntze. Still at Bristol, 1917, Mrs SANDWITH ; Sandal, Leeds and Bradford, York, HORRELL.

†1165. CAUCALIS LEPTOPHYLLA L. Sandall and Kirkstall, York, HORRELL, vide sp.

†1171. C. LATIFOLIA L. Par Harbour, Cornwall, A. B. COBBE.

1172. HEDERA HELIX L., var. BOREALIS Druce. Fordwell, Oxon, DRUCE.

†1177. SAMBUCUS RACEMOSUS L. Glen, Peebles, seeding, DRUCE.

*1179. S. EBULUS L. Hedge near Blackmore Gate, N. Devon, M. COBBE.

†1189. LEYCESTERIA FORMOSA Wallich. On a high cliff by a road-side near Lynton, N. Devon, REDGRAVE.

[1192. GALIUM BOREALE L. Cheddleton, Staffs., *Ridge Rep.* 1917.]

1194. G. ERECTUM Huds. Wilsford, S. Wilts., DRUCE.

*1196. G. PUMILUM Murray. Cwm Meillionen, Carnarvon, 1917 (seen there also by SALMON); Glen, Peebles, with *Helianthemum Chamaecistus*, the glabrous form in both cases, DRUCE ; in a rough field on the down near Ferring, W. Sussex, Miss TODD. Already recorded for 13. The above name should replace *G. sylvestre* or *G. asperum*.

1198. G. PALUSTRE L., var. LANCEOLATUM Uechtr. New Forest, S. Hants.; near Mundham, W. Sussex, DRUCE; Balerno, Fife, J. H. MARTIN. This also seems to agree with var. *umbrosum* Aschers. Fl. Brand. 276, var. *majus* Schur Enum. 280, but the older name is *lanceolatum*, which differs from *elongatum* Presl by the rough angles to the stem.

†1210. ASPERULA ARVENSIS L. Hove, Sussex, 1917, Miss TODD.

1237. SCABIOSA SUCCISA L., var. GLABRATA Schultes. Moel Hebog, Carnarvon, DRUCE.

†1242. GRINDELIA SQUARROSA L. Long Ashton, N. Somerset, 1917, I. M. ROPER.

†1244. SOLIDAGO LANCEOLATA L.! A small colony remote from houses on roadside near Perranporth, Cornwall, there for the last 12 years, RILSTONE; waste ground, Swanage, Dorset, 1917, GREEN.

1248. BELLIS PERENNIS L., lusus PROLIFERA. Swanage, Dorset, GREEN. This is the "Hen and Chicken" form.

†1255. ASTER NOVI-BELGII. Elland, York, HORRELL.

†1257 (2). A. LANCEOLATUS Willd. Ashley, near Milton, S. Hants, 1917, CUMMING.

†1262. ERIGERON CANADENSE L. Swanage Camp, Dorset, 1917, GREEN; Portmadoc, Carnarvon, DRUCE; Woodhall Spa, ALSTON.

†1281. INULA BRITANNICA L. Woodhall Spa, ALSTON. An unusual alien on corn refuse. This may explain its occurrence in Leicestershire.

†1284. I. VISCOSA Ait. Still at Portmadoc, Carnarvon, 1917, DRUCE.

†1287. ODONTOSPERMUM AQUATICUM Sch.-Bip.! Ovenden, York, A. BATES, ex HORRELL.

†1289. IVA XANTHIIFOLIA Nuttall! Elland, York, 1916, HORRELL.

†1291. AMBROSIA ARTEMISIFOLIA L.! Studland, Corfe Castle, Swanage, 1915, GREEN; garden ground, Reading, Berks., 1917, STANSFIELD, vide sp.

†1292. A. TRIFIDA L. Swanage Camp, Dorset, 1917, GREEN; Bristol, I. M. ROPER; Ravensthorpe, York, BURRELL; Pye Hall Farm, E. Suffolk, HORWOOD. Thellung passed the N. Somerset specimen as correct. See *Rep. B.E.C.* 491, 1916.

†1295. XANTHIUM SPINOSUM L. Exmouth Docks, M. COBBE; Abingdon, Berks., N. LINDSAY; Northampton Race Course after camp, 1917, GOODE; Portmadoc, Carnarvon, DRUCE; Pye Hall Farm, E. Suffolk, HORWOOD.

†1302. HELIANTHUS RIGIDUS Desf. Near Birmingham, Warwickshire, DRUCE; Gathampton, Oxon, GAMBIER-PARRY.

†1303 (3). H. DEBILIS Nutt.! Woodhall Spa, ALSTON.

†1306. GUIZOTIA OLEIFERA DC. (? syn. with G. ABYSSINICA.) Bristol, 1917, I. M. ROPER.

†1308. COREOPSIS TINCTORIA Nuttall! Naphill fowl run, Bucks., CLARKE.

†1312. GALINSOGA PARVIFLORA Cav.! Guildford, Surrey, KENNEDY; Welbeck, Notts., 1917, GOULDING.

†1315. HEMIZONIA PUNGENS T. & G. Par, Cornwall, RILSTONE.

†1317. H. KELLOGGII Greene. Ware, Herts., DRUCE; Pye Hall Farm, Suffolk, HORWOOD, vide sp.; Elland, York, HORRELL, vide sp.

†1323. ANACYCLUS CLAVATUS Pers. Sandall, York, HORRELL, teste THELLUNG.

†1331. ACHILLEA NOBILIS L. ! Southampton, 1917, RAYNER; Woodhall Spa, ALSTON.

1339. ANTHEMIS NOBILIS L. Broughton, Gifford Common, N. Wilts., rare in the county, NOEL SANDWITH.

†1340. A. COTA L. (A. ALTISSIMA L.). Hull, 1914, WATERFALL, teste THELLUNG; Botley, Oxon, DRUCE; Kirkstall, York, HORRELL.

†1341. A. AUSTRIACA Jacq. Hull, WATERFALL.

†1344. A. RUTHENICA Bieb. Hull, WATERFALL.

†1348. A. MIXTA L. ! Hove, Sussex, 1917, Miss TODD.

†1362. MATRICARIA SUAVEOLENS Buch. Common now in Dorset, GREEN; Clynderwen to Narberth, Pembroke, ARNETT; Bodorgan, Anglesey, DRUCE.

†1363 (2). M. DISCIFORMIS DC. Elland, York; Dean Clough, Halifax, HORRELL, vide sp.

1367. ARTEMISIA ABSINTHIUM L. Woodhall Spa, ALSTON.

1373. A. VULGARIS L., var. COARCTATA Fors. Beddgelert, Carnarvon; Bordorgan, Anglesey; Malvern, Worcester, DRUCE; Bere Regis, Swanage, Dorset, GREEN; Frosten Den, E. Suffolk, HORWOOD.

†1380. A. BIENNIS Willd. Swanage, Dorset, 1916, GREEN; Silloth, Cumberland, WALLIS, ex SALMON, vide sp.; Elland, York, HORRELL.

†1396. SENECIO SQUALIDUS L. Par Harbour and along the line near St Blazey, Cornwall; Exmouth Harbour, S. Devon, M. COBBE; Leamington, Warwick; Portland, Dorset, 1900, DRUCE; railway near Sandsfoot Castle, Dorset, 1916, GREEN.

*1399. S. VISCOSUS L. Railway near Maenclochog, Pembroke, ARNETT, vide sp.; Denham, Bucks., and Hampstead, Middlesex (already recorded), REDGRAVE.

1401. S. VULGARIS L., var. RADIATUS Koch. Teignmouth Docks, S. Devon, A. B. COBBE.

†1402. S. CINERARIA DC. Woolacombe, N. Devon, H. BUTLER; Budleigh Salterton, S. Devon, M. COBBE.

†1402. × S. ALBESCENS B. and C. Saunton, N. Devon, M. COBBE; Swanage, Dorset, known there for many years, GREEN.

†1410. CALENDULA OFFICINALIS L. Iffley, Oxon.; Conway, Carnarvon, DRUCE; Southwold Cliffs, E. Suffolk, established, HORWOOD.

†1412. CRYPTOSTEMMA CALENDULA (L.) Druce! Bradford, York, 1917, CRYER; Galashiels, Selkirk, 1917, Lanal, I. M. HAYWARD.

*1420. ARCTIUM NEMOROSUM Lej. Patshull, Staffs., Lady J. LEGGE'S SCOUTS; Glen, Peebles, DRUCE.

*1424. CARDUUS ACANTHOIDES × NUTANS. Ulwell Downs, Dorset, GREEN.

1434. CIRSIUM PALUSTRE Scop., var. FEROX Druce. Cwm Meillonen, Carnarvon; Glen, Peebles, DRUCE.

1439. ONOPORDON ACANTHIUM L. Cliffs at Saunton, N. Devon, M. COBBE. Var. VIRIDE Mich. Near this, near Bristol, I. M. ROPER.

†1443. MARIANA LACTEA Hill. Pye Hall Farm, Wrentham, Suffolk, HORWOOD; Northampton Race Course, GOODE.

1456. CENTAUREA SCABIOSA L., var. ANGUSIENSIS Williams. St. Mary Church, S. Devon, Miss LARTER, ex *Hiern Rep.*

†1462. C. SOLSTITIALIS L. Kirkstall, York, 1916, HORRELL.

†1463. C. MELITENSIS L. Par, Cornwall; Exmouth, S. Devon, M. COBBE; waste ground, Poole, Dorset, GREEN; Pye Hall Farm, Suffolk, HORWOOD; Dean Clough, Halifax, HORRELL.

†1465. C. CALCITRAPA L. Wrentham, Suffolk, HORWOOD.

†1467. C. PALLESCENS Delile. Dean Clough, Halifax, HORRELL.

†1470. C. SALMANTICA L. Sandal, York, HORRELL.

†1477. CARTHAMUS TINCTORIUS L. Tywardreath, Cornwall, A. B. COBBE: Abingdon, Berks.; Portmadoc, Carnarvon, DRUCE.

*1480. CICHORIUM INTYBUS L. Glen, Peebles, 1909, onward! Lady GLENCONNER.

†1485. Rhagadiolus stellatus Gaertn. (edulis). Dean Clough, York, Horrell.

1494. Crepis biennis L. Little Salkeld, Cumberland, W. Mason, vide sp.

†1512. Hieracium aurantiacum L. Church Knowle, Dorset, Green; Patshull, Staffs., Lady J. Legge's Scouts.

*1536. H. hyparcticum Elfstr. Allt Coire Dhubh, Easterness, Marshall, in *lit.* For other records of his see *Journ. Bot.* 131, 1917.

1572. H. serratifrons Almq. Site of Coxe's Wood, Crowthorn, Berks., Monckton. Var. lepistoides Johannst. Reading, 1915, Druce; Crowthorn, Berks., Monckton.

*1588. H. surrejanum F. J. H. Finchampstead Ridges, Berks.; Wellington College, Berks., Monckton.

*1601. H. pinnatifidum Lönnr., var. vivarium Lönnr. S. Sebastian, Wokingham, Berks., 1916, Monckton.

*1609. H. sciaphilum Uechtr. Patshull, Staffs., Lady J. Legge's Scouts!

1629. H. tridentatum Fr., var. acrifolium Dahlst. Poole, Carey Heath, etc., Dorset, Green.

1630. H. rigidum Hartm., var. trichocaulon Dahlst. Parkstone, Dorset, Green; Wellington College, Berks., 1917, Monckton.

1638. H. umbellatum L., var. linariifolium Wallr. New Mills Heath, Kempstone, Dorset, Green and Ellman. Var. coronopifolium Fr. New Mills Heath, Wareham railway bank, Dorset, Green.

1640. Hypochaeris radicata L., var. leiocephala Regel. Easton Broad Heath, W. Suffolk, Horwood. The description of var. *hispida* in *Hayward's Bot. Pocket Book* needs correcting. It is the outside of the phyllaries which have hispid hairs, a distinguishing feature from the above variety in which they are glabrous.

1645 (2). TARAXACUM LAEVIGATUM DC. Swanage, Dorset, May 1917;* Wilstone, S. Wilts.; *Glen, Peebles, DRUCE.

1645 (3). T. OBLIQUUM Dahlst. *Wilstone, Wilts.; *Swanage, Dorset; Oxford;* Bangor, Carnarvon, DRUCE.

1646. T. PALUSTRE DC. Yate Common, W. Gloster, 1914, BUCKNALL.

1646 (2). T. SPECTABILE Dahlst. Beddgelert, Carnarvon; *Glen, Peebles, DRUCE.

*1651. LACTUCA MURALIS Fries. Between Rostrevor and Woodhouse, Co. Down, WADDELL, in *Ir. Nat.* 1917.

1656. SONCHUS ARVENSIS L., var. LAEVIPES Koch. Gwynnant, Carnarvon, in quantity, DRUCE.

*1657. S. ASPER × OLERACEUS. What is almost certainly this hybrid was seen in rich garden soil at Lord Glenconner's, Wilsford Manor, in July 1917. *S. asper* and *oleraceus* were both growing there and in considerable variety, but a few plants with intermediate flower and leaf characters were observed, and the fruits in these cases were not ripened.

1658. S. OLERACEUS L., var. LACERUS Wallr. Brixham, S. Devon, Lady DAVY and DRUCE. Var. INTEGRIFOLIA Wallr. Wilsford, S. Wilts, DRUCE.

1666. JASIONE MONTANA L. Near Clevedon, N. Somerset, WILLIAMS, ex I. M. ROPER. Var. LITORALIS Fries. Studland Bay, Dorset, 1917, GREEN.

†1674. CAMPANULA RAPUNCULOIDES L. Swaffham Prior, W. Norfolk, ADAIR, in *lit.*; *Steephill Cove, Isle of Wight, 1917, ARDNER and GREEN.

1678. C. PATULA L. Near Horton, W. Gloster, HARFORD, ex WHITE.

1685. VACCINIUM MYRTILLUS L. Has turned up this year in N. Lincoln. Not seen since 1780, WOODRUFFE-PEACOCK, in *lit.*

*1685. V. MYRTILLUS L. × VITIS-IDAEA = × V. INTERMEDIUM. One enormous plant, Lonsdale, N. E. Yorks, HESLOP-HARRISON, in *lit.*

*1686. V. VITIS-IDAEA L. In good quantity above East Quantock Head, S. Somerset, 1917, KNOWLES, ex MARSHALL, in *lit.*

*1690. ARCTOSTAPHYLOS UVA-URSI Spreng. Lonsdale in Cleveland, N. E. Yorks, HESLOP-HARRISON.

1692. ANDROMEDA POLIFOLIA L. Bog in Co. Antrim, TOMLINSON in *Ir. Nat.*, 1916.

1693. CALLUNA VULGARIS Hull, var. SPECIOSA Druce. Holyhead Mt., Anglesey, DRUCE.

1697. ERICA CILIARIS L. × TETRALIX. Studland, Sleepe and Wytch Heaths, Dorset, GREEN.

†1706. RHODODENDRON PONTICUM L. Seeding freely at Glen, Peebles, DRUCE.

*1714. LIMONIUM HUMILE Mill. Teesmouth, Durham, HESLOP-HARRISON, in *lit.*

1715. L. LYCHNIDIFOLIUM Kuntze. In another locality in Jersey, ATTENBOROUGH.

1721. STATICE LINEARIFOLIA Lat. Kirby-le-Soken, N. Essex; Holyhead, Anglesey; Carnarvon, DRUCE.

1722. S. MARITIMA Mill. Hayling Island, S. Hants., DRUCE.

1742. ANAGALLIS FEMINA Mill. Hambledon, S. Hants., H. BUTLER; Exmouth, S. Devon, M. COBBE.

†1748. FRAXINUS EXCELSIOR L., var. DIVERSIFOLIA Ait. Scrivelsby Park, N. Lincoln, ALSTON.

1757. CENTAURIUM PULCHELLUM Druce. Braunton Burrows, N. Devon, M. COBBE. Var. TENUIFLORUM (Link) Druce. East of Littlesea, Dorset, 1917, GREEN.

*1762. GENTIANA VERNA L. Above Alston, Cumberland, G. BOLAM, ex HESLOP HARRISON.

1763. G. AMARELLA L. Near Loch Moraig, E. Perth, BARCLAY.

1764. G. GERMANICA Willd. Streatley, Berks., 1917, thus verifying Pamplin's record, GAMBIER-PARRY.

1765. G. CAMPESTRIS L., var. BALTICA (Murb.). Treardur, Aberfraw, Anglesey, DRUCE.

†1781. HELIOTROPIUM EUROPAEUM L. Bristol, W. Gloster, 1914, WHITE.

†1787. LAPPULA ECHINATA Gilib. Swanage, Dorset, GREEN; Pye Hall Farm, E. Suffolk, HORWOOD; Hambledon, S. Hants., H. BUTLER; Woodhall Spa, ALSTON.

†1789 (2). BENTHAMIA (AMSINCKIA) ANGUSTIFOLIA (Lehm.) Druce. Par, Cornwall, A. B. COBBE.

1789 (3). B. LYCOPSIOIDES Lindl. Naphill, Bucks.; Biddesden, Wilsford, S. Wilts., DRUCE; Salisbury, GODDARD; Gloster Dock, Miss TODD; Cirencester, E. Gloster, GREENWOOD; Chepstow, Monmouth, LAMB; Winscombe, N. Somerset, Miss TODD; Romsey, S. Hants., RAYNER; Elland, York, HORRELL.

*1790. SYMPHYTUM OFFICINALE L. Lyneside below West Linton, Peebles, FRASER, *l.c.*

†1791. S. TUBEROSUM L. Falland House, N. Somerset, 1912, I. M. ROPER.

†1792. S. PEREGRINUM Ledeb. Between Truro and Malpas, Cornwall, M. COBBE; Wool, Dorset, DRUCE.

†1793. S. ORIENTALE L. Spylaw Park, Edinburgh; Dysart Woods, Aberdour; Raith, Fife, FRASER, *l.c.*

†1798. ANCHUSA SEMPERVIRENS L. Near Lulworth, Dorset, GREEN.

†1800. A. OFFICINALIS L. Acton, Oakamoor, Chartley, Denstone, Staffs., *Ridge Rep.*; Alresford, N. Hants., *Winton Rep.*

†1800 (3). A. PROCERA Bess. Kirkstall, York, HORRELL; Woodhall Spa, ALSTON.

†1810. ASPERUGO PROCUMBENS L. Oakamoor, Rocester, Stafford, *Ridge Rep.*

1820. MYOSOTIS COLLINA Hoffm., var. MITTENII Baker. Bindon Hill, Dorset, 1912, GREEN.

1822. LITHOSPERMUM OFFICINALE L., var. PSEUDO-LATIFOLIUM Salm. Rapsgate, E. Gloster, GREENWOOD.

†1835. CONVOLVULUS TRICOLOR L. Fowl run, Abbotsleigh, N. Somerset, I. M. ROPER.

†1839. CUSCUTA EPITHYMUM Murr. Upper Hardres, Kent, ASSHETON.

†1848. SOLANUM ROSTRATUM Dunal. Northampton Race Course, 1917, GOODE, teste THELLUNG.

†1851 (3). PHYSALIS IXOCARPA Brot. Abingdon, Berks., N. LINDSAY and DRUCE.

†1852. NICANDRA PHYSALOIDES L.! Exmouth Docks, S. Devon, A. B. COBBE.

†1855. DATURA STRAMONIUM L. Wilsford Manor, Wilts.! Lady GLENCONNER; Patshull, Staffs., Lady J. LEGGE'S SCOUTS. Var. TATULA (L.) Selkirk, I. M. HAYWARD and DRUCE.

1866. VERBASCUM LYCHNITIS L. Gravel pit, Worms Hill, Surrey, Lady VICTORIA RUSSELL; Ware, Herts., Miss TROWER and DRUCE.

†1870. V. PHOENICEUM L. Par Harbour, Cornwall, A. B. COBBE.

1873. LINARIA VULGARIS Mill., var. LATIFOLIA Bab. Blackawton, S. Devon, Miss LARTER.

†1877. L. PURPUREA Mill. Chepstow, Monmouth, Miss TODD; quite wild on cliff at Lynmouth, N. Devon, REDGRAVE; Brixham, DRUCE; (waste ground) Exeter, S. Devon, M. COBBE; above Swanage, Dorset, GREEN.

1878. L. REPENS Mill. Bettws-y-Coed, Carnarvon, 1871, COMBER, in *Hb. Druce*; Great Haywood, Staffs., *Ridge Rep.* 1871.

*1884. L. SPURIA Mill. Alton, Staffs., *Ridge Rep.*

*1885. L. ELATINE Mill. Stoke, Staffs., *Ridge Rep.*

*1893. SCROPHULARIA ALATA Gilib. Benacre Broad, E. Suffolk, HORWOOD.

†1898. MIMULUS GUTTATUS DC. Glen, Peebles, far up the Quair Burn. Perhaps introduced there by Sir C. Tennant. It is a very beautiful form, with the spots of a cinnabar-red rather than brown. DRUCE.

†1899. M. MOSCHATUS Dougl. Banks of river, near Lynmouth, N. Devon, REDGRAVE.

*1906. VERONICA HYBRIDA L. Avonbank, near Bristol, N. Somerset, I. M. ROPER.

*1912. V. AQUATICA Bern. Appleshaw, N. Hants., DRUCE; Cove, E. Suffolk, HORWOOD.

†1927. V. PEREGRINA L. On the Fal, Cornwall (already recorded from Truro), GREEN.

1931. EUPHRASIA STRICTA Host. Barpham Down, W. Sussex, LITTLE.

1933 (2). E. FENNICA Kihlm. Above Myrtleberry Cleave, Lynton, N. Devon, BARTON.

1936. E. OCCIDENTALIS Wetts. St. Ives, Cornwall, ex PEARSALL; Woolacombe, N. Devon, HURST.

*1940 (2). E. MINIMA Fr. Catbells, above Derwentwater, Cumberland, PEARSALL: Bigland, N. Lancs., 69*b*, PEARSALL; Glen, Peebles, DRUCE. Var. ARBUSCULA. Sail, N. Lancs., 69*b*, PEARSALL.

*1943. E. KERNERI Wetts. Monzell, N. Lancs., 69*b*, PEARSALL; Ailsworth, Northants., 1910; The Glen, Peebles, DRUCE.

1960. MELAMPYRUM PRATENSE L., var. HIANS Druce. Beddgelert, Carnarvon, DRUCE.

1966. OROBANCHE MAJOR L. Near Upper Hardres (dis. 7), Kent, ASSHETON.

1970. O. AMETHYSTEA Thuill. On *Daucus gummifer.* Winspit quarries, Dorset, GREEN and SHERRING.

†1988. MENTHA ROTUNDIFOLIA Huds. Chicken run, Woodhall Spa, ALSTON; possibly crossed with *longifolia*, as it is not our type; vide sp. Corfe Castle, Swanage, Dorset, GREEN.

†*1989. M. ALOPECUROIDES Hull. By the Tweed, Galashiels, Selkirk, 1917, I. M. HAYWARD and DRUCE; by the Water Works at Ilfracombe, N. Devon, HURST.

1990. M. LONGIFOLIA Huds. Appleshaw, N. Hants., Hon. Mrs BARING and DRUCE. Only two localities given in *Fl. Hants.* * Var. SAPIDA Briq.! Stow Bedon, W. Norfolk, REYNOLDS; Baildon, York, CRYER, vide sp.

†1991. M. SPICATA L., approaching CRISPA. Glen, Peebles, DRUCE; Swanage, Dorset, GREEN.

†*1992. M. CRISPA L. Swanage, Dorset, 1916, GREEN; Pangbourne, Berks., F. J. SMITH. The specimen suggests a strain of *rotundifolia*, but the flavour is pure spear-mint.

1993. M. PIPERITA L. Swanage, Dorset, GREEN; abundant along the Quair Burn and above the Glen for some distance, Peebles; *Galashiels, Roxburgh, DRUCE.

1997. × M. GENTILIS L. Swanage, Dorset, 1914, GREEN; Tweedside, Roxburgh; Traquair, Peebles, DRUCE. Var. HACKENBRUCHII Briq. Derby, FORDHAM.

1999. × M. RUBRA Huds. Hamworthy Junction, Dorset, 1916, GREEN.

2011. SATUREIA CALAMINTHA Scheele, var. BRIGGSII Druce. Tenby, Pembroke, ARNETT.

†2017. MELISSA OFFICINALIS L. Bodorgan, Anglesey; Gwynnant, Carnarvon, DRUCE; Wareside, Herts., HIGGENS, to replace *Satureia Calamintha*. See *Rep. B.E.C.* 498, 1916.

†2020. SALVIA AETHIOPIS L. Woodhall Spa, ALSTON.

*2023. S. PRATENSIS L. Near Hatherop, E. Gloster, GREENWOOD.

†2024. S. SYLVESTRIS L. Ware, Herts., DRUCE.

†2025. S. NEMOROSA L. Par Harbour, Cornwall, A. B. COBBE and RILSTONE; Woodhall Spa, ALSTON.

2026. S. VERBENACA L., with large flowers. Between Shoreham and Hove, Sussex, 1917, Miss TODD. The leaves are quite those of ordinary *Verbenaca*, having no resemblance to those of *Marquandii*, nor are the flowers similar, and they are of a much darker blue.

†2031. S. VERTICILLATA L. Wangford, W. Suffolk, HORWOOD: Chilterns, Oxford, 1917, DRUCE; Woodhall Spa, 1917, ALSTON: Slateford, etc., Edinburgh; Burntisland, etc., Fife, FRASER, *l.c.*

†2039. DRACOCEPHALUM PARVIFLORUM Nutt. Par, Cornwall, RILSTONE.

†2041. LALLEMANTIA IBERICA M. Bieb. Kirkstall, York, HORRELL.

*2042. SCUTELLARIA GALERICULATA × MINOR. Sandy spit, Arne Moors, near Ridge, Dorset; Stoborough, Dorset, GREEN.

2044. PRUNELLA VULGARIS L., var. NEMORALIS Beg. Wychwood, Oxon; Naphill, Bucks.; Great Yews, S. Wilts., DRUCE.

†2048. SIDERITIS MONTANA L. Elland, York, HORRELL.

2049. MARRUBIUM VULGARE L. Galashiels, Selkirk, a wool alien. Less hoary than the common plant, the upper leaf surface being dull green. Probably brought in with Australian wool, to which continent it was introduced from Europe.

†2050. M. ALYSSON L. Bristol, W. Gloster, Mrs SANDWITH.

†2052. STACHYS GERMANICA L. Casual at Kingswood, Bristol, 1917, Mrs SANDWITH.

†2055. S. lanata Jacq. Site of old garden, Tenby, Pembroke, Arnett.

2056. S. sylvatica L. Near Cirencester, Greenwood. See *Rep. B.E.C.* 114, 1911, and Knuth *Handb. Pollination* 119. In several of these specimens there is dialysis of the carpels in which the bilobed carpels are changed into a nearly one-celled capsule. The corolla, too, is strangely modified, some of the flowers appearing almost regular.

*2056. × S. ambigua Sm. Beddgelert, Carnarvon; Bodorgan, Isallt, Anglesey, Druce; Wangford, E. Suffolk, Horwood; Patshull, Staffs., Lady J. Legge's Scouts!

†2059. S. annua L. Par, Cornwall, Rilstone; Halifax, York, Horrell; Covehithe, E. Suffolk, Horwood.

2060. S. officinalis Trev., var. nana Druce. Flowers Barrow, Corfe Castle, Dorset, 1916, Green.

2061. Galeopsis speciosa Mill. Patshull, Staffs., as established there as anywhere, Lady J. Legge's Scouts.

2062. G. Tetrahit L., var. nigricans Bréb. Beddgelert, etc., Carnarvon; Bodorgan, Isallt, Anglesey, Druce.

[2063. G. dubia Leers. Stoke, Staffs., *Ridge Rep.* 1917. Needs confirmation.]

†2065. Leonurus Cardiaca L. Still at Portishead, N. Somerset, Miss Todd; Woodhall Spa, as var. *hirsutus*, Alston.

2072. Lamium hybridum Vill. Rare in Anglesey. Luxuriant as a garden weed at Isallt, 1917, Druce.

2077. Ballota nigra L., var. membranacea Druce. Newham, Minsterworth, W. Gloster, Miss Todd.

†2078. Phlomis fruticosa L. Tormoham, S. Devon, in a cataract of bloom, Miss Larter in *Hiern Rep.*

†2089. Plantago indica L. (arenaria). Billingshurst, W. Sussex, Webster.

2092. P. LANCEOLATA L., var. DUBIA Lilj. Les Sommeilleuses, Guernsey, July 1914, BARTON. Det. E. J. BAKER.

2099. P. MAJOR L., var. AGRESTIS Fries. Avebury Down and Calne, N. Wilts., 1915, BARTON.

2103. HERNIARIA GLABRA L. Horstead, E. Norfolk, J. F. BUXTON; *Great Selkirk, Cumberland, 1911, H. BRITTEN. Still there, VARTRY-SMITH. ? adventive.

†2106. H. CINEREA DC. Meanwood, Leeds, S.W. Yorks., HORRELL.

†2110. AMARANTHUS RETROFLEXUS L. Naphill, Bucks., CLARKE & DRUCE; Corfe Castle, Swanage, Dorset, GREEN; Woodhall Spa, ALSTON.

†2112. A. ALBUS L. Waste ground, York, T. J. FOGGITT, teste A. THELLUNG.

†2114. A. CHLOROSTACHYS Willd., var. ARISTULATUS Thell. Abingdon, Berks., N. LINDSAY & DRUCE.

†2116 (5). A. THUNBERGII Moq. Abingdon, Berks., N. LINDSAY & DRUCE; Gala, Selkirk, 1917, in plenty, I. M. HAYWARD & DRUCE.

2117. CHENOPODIUM RUBRUM L., var. BLITOIDES Wallr. Slapton Lees, A. B. COBBE.

2120. C. HYBRIDUM L. Billingshurst, Sussex, WEBSTER.

†2121. C. URBICUM L. Woodhall Spa, ALSTON.

2122. C. MURALE L. Bradford, York, CRYER; Abingdon, Berks., N. LINDSAY. Var. MICROPHYLLUM Rouy. Ware, Herts., DRUCE; Woodhall Spa, ALSTON.

†2123. C. OPULIFOLIUM Schrad. Henham Peak, E. Suffolk, HORWOOD, in *lit.*

2124. C. ALBUM L., var. BORBASIFORME (Murr.). Bradford, York, CRYER.

2124. C. ALBUM × STRIATUM. Swanage Camp, Dorset, GREEN; Botley, Oxon, DRUCE.

†2124 (2). C. LANCEOLATUM Muhl. St Philip's, Bristol, 1916; Abingdon, Berks., 1917; Bangor, Carnarvon; Holyhead, Anglesey, DRUCE; Pye Hall Farm, E. Suffolk, HORWOOD.

*2124 (4). C. BERLANDIERI Moq. Lynton, N. Devon, A. B. COBBE. The specimen is young.

†2125. C. LEPTOPHYLLUM Nutt. Swanage Camp, Dorset, GREEN: Henham Peak, E. Suffolk, HORWOOD; Woodhall Spa, ALSTON; Bradford, York, CRYER; Billingshurst, W. Sussex, WEBSTER.

†2127. C. GLAUCUM L. Bristol, 1917, Mrs SANDWITH.

2128. C. VULVARIA L. Exmouth, S. Devon, A. B. COBBE.

†2130. C. AMBROSIOIDES L. Bradford, York, CRYER, vide sp.

†2131. C. BOTRYS L. Bradford, York, CRYER.

†2131 (2). C. STRIATUM (Kras.) Botley, Oxon; Abingdon, Berks., DRUCE.

†2131 (3). C. HIRCINUM Schrad. Abingdon, Berks., DRUCE; Pye Hall Farm, E. Suffolk, HORWOOD; Meanwood, Leeds, HORRELL: Bradford, York, CRYER, as a very small-leaved form and var. SUBTRILOBUM Issl.

2131 (3). C. HIRCINUM × ALBUM! Meanwood, Leeds, HORRELL.

†2133. C. CAPITATUM Asch. Scrivelsby, Lincoln, ALSTON, vide sp.

2134. C. VIRGATUM Amb. In garden ground, Bath, N. Somerset, T. H. GREEN; near Patshull, Staffs., Lady J. LEGGE's SCOUTS.

†2135 (5). MONOLEPIS NUTTALLI Engelm. Bristol, 1917, I. M. ROPER. Forma MINOR Thell. See next *Report.*

†2142. ATRIPLEX HALIMUS L. North side of Poole Harbour, Dorset, GREEN.

2149. A. GLABRIUSCULA Edmonst. Monifieth, Forfar, 1845 W. GARDINER as *A. rosea* L.

†2153 (10). AXYRIS AMARANTOIDES L. Naphill, Bucks., DRUCE; Pye Hall Farm, E. Suffolk, HORWOOD; Billingshurst, W. Sussex, 1916,

WEBSTER; Northampton Race Course, 1916, GOODE; Portmadoc, Carnarvon, 1917, DRUCE.

*2156. SALICORNIA PERENNIS Mill. Teesmouth, Durham, HESLOP-HARRISON, with S. DOLICHOSTACHYA, S. RAMOSISSIMA, and S. DISARTICULATA. *Var. LIGNOSA Woods. St Helens Spit, Isle of Wight, GREEN.

2160. S. RAMOSISSIMA Woods. Arne Saltings, Dorset, GREEN. There are specimens collected, circa 1706, by Stonestreet from Poole in *Herb. Dubois*.

2161 (2). S. DOLICHOSTACHYA × HERBACEA, f. STRICTA. Newton and Yarmouth, Isle of Wight, 1916; Barmouth Junction, Merioneth, 1915, BARTON. Det. E. J. SALISBURY.

2161 (3). S. DISARTICULATA Moss. Poole, Dorset, 1917, GREEN & BUCKNALL. Det. E. J. SALISBURY.

2161 (3). S. DISARTICULATA × GRACILLIMA. Newtown, Isle of Wight, September 1916, BARTON. Det. E. J. SALISBURY.

2164. DONDIA MARITIMA Druce, var. MACROCARPA Moq. Poole Harbour, Dorset, GREEN. Var. PROCUMBENS Druce. St Helens Spit, Isle of Wight, GARDNER and GREEN.

†2168. SALSOLA KALI L. Northampton Race Course, 1916, GOODE.

†2168 (2). S. TRAGUS L. Bristol, W. Gloster, I. M. ROPER.

*2171. POLYGONUM BISTORTA L. Traquair, Peebles, DRUCE.

2176. P. TOMENTOSUM Schrank. *Saunton, N. Devon: Exeter, Exmouth, S. Devon, M. COBBE.

*2177. P. HYDROPIPER × MITE. Symond's Yat, W. Gloster, 1911, Miss VACHELL, with both parents, vide sp.

2178. P. MITE Schrank, forma ALBA, with above, Miss VACHELL; Oakamoor, Hilderstone, Staffs., *Ridge Rep.* 1917.

†2183. P. PATULUM M. Bieb. (Bellardi). Bradford, York, CRYER.

2184. P. AEQUALE Lindm. Bodorgan, Anglesey; Bangor, Carnarvon, DRUCE.

†2185 (3). P. PLEBIUM R. Br. Sandal, York, 1916, HORRELL.

†2191. P. CUSPIDATUM S. and Z. Exeter, S. Devon, M. COBBE; Abingdon, Berks., DRUCE.

*2195. RUMEX MAXIMUS Schreb. Swanage, Littlesea, Dorset, 1915, GREEN; Wilsford, S. Wilts., DRUCE.

2198. R. CRISPUS × OBTUSIFOLIUS. Wyke, W. Sussex, DRUCE. × NEMOROSUS = R. SAGORSKI Hausskn. Wyke, W. Sussex, DRUCE.

*2200. R. OBTUSIFOLIUS × NEMOROSUS = R. DUFFTII. Chichester, W. Sussex, DRUCE.

†*2201. R. SANGUINEUS L., vera. Bangor, Carnarvon, 1917, DRUCE.

2203. R. CONGLOMERATUS × PULCHER = R. MURETI Hausskn. Chichester, W. Sussex, 1917, DRUCE. The combination, *R. glomeratus* × *pulcher*, is invalid; *conglomeratus* is the older name.

2204. R. RUPESTRIS Le Gall. Ringstead Bay, Dorset, GREEN, teste LINTON.

†2208. R. BUCEPHALOPHORUS L. Ware, Herts., DRUCE.

†2210 (3). R. DENTATUS L. Meanwood, Leeds, HORRELL.

†2210 (6). R. SALICIFOLIUS Weinm. Swanage Camp, Dorset, GREEN.

2212. ASARUM EUROPAEUM L. Still plentiful in the Wiltshire locality, H. J. GODDARD, in *lit.*

2215. DAPHNE MEZEREUM L. Wood between Oakley and Hannington, N. Hants., in flower, April 21, 1917, DUKINFIELD H. SCOTT, in *lit.*

2218. THESIUM HUMIFUSUM DC. On genuine old down near Upper Hardres (dis. 7), Kent, Mrs ASSHETON. A very rare plant in Kent, the only recorded locality being that of Bishopburn, where the Rev. E. Ellman found it many years ago. The above locality is near to that place.

†2229. EUPHORBIA ESULA L. Falmouth Docks, Cornwall, M. COBBE; Wyke, Sussex, BURDON & DRUCE, a form with subtending lateral branches as long as the inflorescence, and with the leaves longly linear. Its varietal name has to be ascertained. Waste land, West Norwood, Surrey, REDGRAVE. Var. PSEUDO-CYPARISSIAS (Jord.). Casual, Kent, Dr M. WILSON, *Proc. Bot. Soc. Edin.*, xii., 1915.

2236. E. EXIGUA L., var. RETUSA DC. Swanage, Dorset, GREEN; Wangford, Suffolk, HORWOOD.

*2237. E. LATHYRUS L. Near Nicholson Wood, near Oxwich, far from houses and near the beach, Glamorgan, Miss VACHELL, who says there is an old record for *E. Cyparissias* from these woods in Dillwyn's *Materials* of 1848. It may be that this was the plant observed.

2243. MERCURIALIS ANNUA L. Portmadoc, Carnarvon. This supports Robinson's *Cat.* DRUCE.

†*2245. ULMUS GLABRA Mill. Bangor, Carnarvon; Traquair, Peebles, DRUCE. Var. MINOR. Henham Peak, E. Suffolk, HORWOOD.

2245. U. HOLLANDICA Mill. Chichester, W. Sussex; Wilstone, S. Wilts.; South Cove, Suffolk, HORWOOD.

2246. U. PLOTII Druce. Bourn, S. Lincoln, DRUCE.

2246. U. CAMPESTRIS L. Fruiting freely at Moraston, Hereford, 1917, E. ARMITAGE.

†2246. U. WHEATLEYI Hort. Bangor, Carnarvon, DRUCE; Henham Peak, E. Suffolk, HORWOOD.

†2248. CANNABIS SATIVA L. Wilsford, S. Wilts., DRUCE; Wrentham, Suffolk, HORWOOD.

2250. URTICA DIOICA L., var. ANGUSTIFOLIA W. & G. The Glen, Peebles, DRUCE.

2259. CARPINUS BETULA L. Cockley Brake, near Farthinghoe, Northants., abundant, R. S. CREED, in *lit.*

†2263. QUERCUS CERRIS L. Spontaneous at Benacre, E. Suffolk, HORWOOD.

†2264. Q. ILEX L. Henham Peak, E. Suffolk, HORWOOD.

*2267. SALIX PENTANDRA L. By the Quair near Glen, Peebles, DRUCE.

*2271. × S. RUBRA Huds. Galashiels, Selkirk, DRUCE.

*2280. S. PHYLICIFOLIA L. Glen, Peebles, DRUCE.

†2288. POPULUS ALBA L. Selkirk, planted of course as always in Britain, DRUCE.

†2291. P. NIGRA L. Traquair, Peebles, DRUCE.

†2293. P. DELTOIDES Marsh. Innerleithen, Peebles, DRUCE; Wangford, Suffolk, HORWOOD.

2308. SPIRANTHES SPIRALIS C. Koch. Said to be scarce in Anglesey, but abundant at Isallt, near Holyhead in 1917, Hon. Mrs BARING!

*2310. GOODYERA REPENS Br. Dipton Wood, near Corbridge, S. of Tyne, Northumberland, 1917, N. TEMPERLEY.

2315. HELLEBORINE PALUSTRIS Schrank, var. ERICETORUM (A. & G.) Druce. Dunes, Whiteford Point, Glamorgan; Kidwelly, Carmarthen, in great abundance and beauty, DRUCE.

2316. H. LATIFOLIA Druce. Bicknoll, N. Wilts., Miss TODD.

2317. H. MEDIA Fries. Oakamoor, Staffs., *Ridge Rep.* Var. ATROVIRIDIS (Linton) Druce. Effingham, Surrey, GEAKE, vide sp.

2318. H. PURPURATA Druce. Edge of pine wood, Longleat, Lady EMMA THYNNE.

2325. ORCHIS LATIFOLIA × MACULATA = O. BRAUNII Hal. Coast of Durham, HESLOP-HARRISON, in *Vasculum*, 7, 1917.

2326. O. PRAETERMISSA × FUCHSII. Albrighton, Salop, Lady JOAN LEGGE, vide sp.

2326. O. INCARNATA × MACULATA = × O. AMBIGUA Kerner. Billingham, Durham, HESLOP-HARRISON, *l.c.*

2327. O. MACULATA L., vera. South Cove, E. Suffolk, HORWOOD.

*2327 (3). O. O'KELLYI Druce. Berwick-in-Elmet, York, 1915, D. WRIGHT; 1917, Rev. R. H. HARVEY.

2330. O. PYRAMIDALIS L. On sea-sand, Monreith, Wigton, Sir HERBERT MAXWELL, in *Gard. Chron.*

2331. O. HIRCINA Crantz. Wangford, Suffolk, HORWOOD; *Birdlip, W. Gloster, Miss C. V. BUTLER. Two excellent records, the latter widely extending its British range; in Suffolk, not recorded since 1847.

*2335. OPHRYS TROLLII Heg. Bank of canal near Rugby, Warwick, Miss CUMMING; near Lewes, Sussex, BEDFORD, in *lit.*

2338. HABENARIA GYMNADENIA × ORCHIS MACULATA. Near Birkenhead, Cheshire, E. F. PAYNE, vide sp.: Fermoy, Cork, with both parents, 1916, Lieut. T. H. LEACH.

2340. H. VIRIDIS Br., var. BRACTEATA Gray. Malvern, Worcester; Yarnton, Oxford, DRUCE.

2343. H. BIFOLIA Br. Weston-in-Gordano, N. Somerset, rare in the v.-c., Mrs SANDWITH.

2356. CROCUS NUDIFLORUS Sm. Patshull, Staffs., Lady JOAN LEGGE'S SCOUTS!

†*2357. C. ALBIFLORUS Kit. Meadow west of Creech Grange, Corfe Castle, Dorset, quite naturalised, GREEN.

†2360. SISYRINCHIUM ANGUSTIFOLIUM Mill. In a fallow field near Charterhouse, Surrey, scattered fairly wide over the field (some 14 acres), and holding its own in competition with the native plants. Found by JOHN, son of our member, Prof. W. A. BATESON, Aug. 1917, teste O. H. LATTER, in *lit.*

†2363 (10). TRITONIA CROCOSMIFLORA Nichols. Abingdon, Berks., DRUCE; South Cove, E. Suffolk, HORWOOD.

?†2364. NARCISSUS PSEUDO-NARCISSUS L. Land at Rysa, Hoy, Orkney, J. WALKER, in *lit.*

2373. N. POETICUS L. Abundant on a cliff, and looking native in an isolated part of St Martin's Parish, Jersey, ATTENBOROUGH.

2378. LEUCOJUM VERNUM L. Woodland, Creech Grange, Dorset, planted doubtless, GREEN.

†2383. ASPARAGUS OFFICINALIS L., var. ALTILIS L. North Bull, Dublin, N. COLGAN, in *Ir. Nat.* 1917; in quantity, Par Sands, Cornwall, M. COBBE.

2385. POLYGONATUM MULTIFLORUM All. Berwick Trench, Oxon., RANDOLPH *MS.* 1790.

2386. P. ODORATUM (Mill.) Druce (OFFICINALE). Still near Tenby in Pembroke, ARNETT.

†2390. ASPHODELUS FISTULOSUS L. Hotton Heath, Dorset, Hon. F. HENLEY; Sibford, Oxford, LAMB.

2405. ALLIUM SCHOENOPRASUM L. Par Sands, and adjacent railway bank, Cornwall, M. COBBE.

2411. SCILLA NON-SCRIPTA L. & H., var. BRACTEATA Druce. Salcombe, S. Devon, H. B. GUPPY.

*2427. JUNCUS ACUTUS L. East side of Arne Promontory, Dorset, Lieut. MARQUAND.

†*2441. J. TENUIS Willd. Old road by Military Camp, Sands of Barry, Forfar, Mrs WEDGWOOD, ex CORSTORPHINE; Lilliput Common, Poole Harbour, Dorset, GREEN.

2449. JUNCOIDES SYLVATICUM (Huds.). Reydon Wood, E. Suffolk, HORWOOD.

2454. J. MULTIFLORUM Druce, var. PALLESCENS (Hoppe) Druce. Hope Mansel, Hereford, Miss TODD.

†2459. PHOENIX DACTYLIFERA L. Abingdon, Berks., DRUCE.

2460. TYPHA LATIFOLIA L. × ANGUSTIFOLIA. *Near Ridge Farm, Dorset, with both parents, GREEN.

*2462. SPARGANIUM NEGLECTUM Beeby. Marshes, Chester, WATERFALL.

†*2478. ELISMA NATANS Buch. Canal near Ashby, Leicester, Father READER, in *lit.* An increasing adventive along our waterways of the northern midlands.

*2499. POTAMOGETON DECIPIENS Nolte, var. LONGIFOLIUS HAGSTR. P. UPSALIENSIS). Near Bindon, Dorset. Mr Green directed me to the locality where he says he first discovered it and from which specimens are distributed this year under a queried name, *lpinus* × *lucens*. ARTHUR BENNETT names it as above.

*2504. P. COMPRESSUM L. Tees-mouth, Durham, HESLOP-HARRISON, in *lit.*

*2510. P. TRICHOIDES C. & S., var. TRIMMERI Casp. Near Gloucester, in an old brick-pit, Miss TODD. Named by ARTHUR BENNETT.

*2517. ZANNICHELLIA GIBBEROSA Reichb. Wyke, W. Sussex, DRUCE.

*2519. Z. MARITIMA Nolte. Kirby-le-Soken, N. Essex, DRUCE; Godlingstone, Swanage, Dorset (as PEDUNCULATA), GREEN.

*2520. ZOSTERA MARINA L., var. ANGUSTIFOLIA Hornem. Strangford Lough, Co. Down, WADDELL, in *Ir. Nat.*

*2521. Z. NANA Roth. Near Grey Abbey, Co. Down, 1917, WADDELL, in *Ir. Nat.*

*2523. NAIAS FLEXILIS R. & S. Kindrum, Donegal, BULLOCK-WEBSTER, in *Ir. Nat.* 1916.

2548. ERIOPHORUM ANGUSTIFOLIUM Roth, var. ELATIUS Koch. Littlesea, Dorset, GREEN. Var. MINUS Koch. Rough Walks, E. Suffolk, HORWOOD.

*2550. E. VAGINATUM L. Between Wool and Bere Regis and Wareham, Dorset, Lieut. C. MARQUAND. A good addition by the son of the author of the *Flora of Guernsey*.

2561. CAREX VESICARIA × INFLATA. Margin of bog north of Langton Waller, Dorset, GREEN, vide sp.

2569. C. STRIGOSA Huds. Talbot Wood, Swanage, Dorset, GREEN, the second station in the county.

2575. C. FULVA Host. Near Mundham, Sussex, W. BURDON & DRUCE, rare in the v.-c.

2576. C. FLAVA L., var. LEPIDOCARPA Tausch. Swanage, etc., Dorset, GREEN.

*2577. C. OEDERI Retz., var. ELATIOR And. Norden Heath, Dorset, GREEN.

*2585. C. MONTANA L. Bagshot Heath, Berks. ! 1917, HIGGENS, vide sp. An important record, linking up the Bucks. habitat, where it was found by Miss Armitage. Surely it will be found on the adjacent heaths in Surrey, Herts., and Middlesex.

2586. C. TOMENTOSA L. Near Withington, E. Gloster., a new station, GREENWOOD.

2587. C. PILULIFERA L., var. LONGIBRACTEATA Lange. Studland Bay, Dorset, GREEN.

2593. C. LIMOSA L. Hartland Moor, Dorset, in several places, GREEN.

2601. C. GRACILIS Curt., var. PROLIXA (Fries). Stoborough, Dorset, GREEN.

2607. C. ELONGATA L. Heydon Wood, E. Suffolk, HORWOOD.

2608. C. LEPORINA L., var. ARGYROGLOCHIN Koch. Withington Wood, E. Gloster, GREENWOOD.

2614. C. LEERSII Schultz. Studland, Dorset, GREEN; Newton Creek, STRATTON; Cirencester, E. Gloster, GREENWOOD.

*2615. C. PAIRAEI Schultz. Lynmouth, N. Devon, REDGRAVE; Wimborne, Keysworth, Dorset, GREEN. The latter in a wet meadow, so that the characters which distinguish it from *muricata* are not the outcome of dry arid soil.

†2632. PANICUM CRUS-GALLI L. Exmouth Docks, S. Devon, M. COBBE; Camp Meadow, Corfe Castle, Swanage, as var. BREVISETUM

Doell and var. longiaristatum Lej., Dorset, Green; Bournemouth, S. Hants., Goddard; Northampton Race Course, Goode.

†2634. P. ciliare Retz. Jersey, Guiton, in *lit.*

†2637. P. capillare L. Swanage Camp, Dorset, Green.

†2639. Setaria viridis Beauv. Poole, Swanage, Dorset, Green; Woodhall Spa, Lincoln, Alston; Exmouth, S. Devon, M. Cobbe.

†2640. S. glauca Beauv. Corfe Castle, Swanage, Dorset, Green; Northampton, 1916, Goode; Portmadoc, Carnarvon, Druce.

†2641. S. verticillata Beauv. Eastville, Bristol, 1917, Mrs Sandwith.

†2646. Tragus racemosus Scop. Meanwood, York, Horrell.

†2653. Phalaris minor L. Sandal, York, Horrell.

†2654. P. paradoxa L. Ware, Herts., Druce; Halifax, York, Horrell.

†2658. Anthoxanthum aristatum Boiss. (Puellii). In the grounds of Holland House, Middlesex, Fraser, in *Gard. Chron.* 119, 1917; *waste ground, Poole, Dorset, Green.

†2679. Phleum graecum B. & H. Waste ground, Swanage, Dorset, Green, teste Kew.

2684. Agrostis alba L., var. stolonifera (L.). Littlesea, Poole, 1915, Green; near Weymouth, Dorset, 1899, Druce. Var. coarctata (Hoffm.). Swanage, Green.

2685. A. tenuis Sibth., var. pumila (L.). Glen, Peebles, Druce.

†2689. A. scabra Willd. Ashley-le-Mersey, Cheshire, J. S. Gale.

†2690. Polypogon monspeliense Desf. Salisbury, Wilts., Goddard.

2697. Deyeuxia borealis Druce. Near Killin, Perth, 1917, Fraser. A most valuable rediscovery to the county, since the marsh where I first found it in Britain was filled up with sawdust and the plant destroyed. The present locality is within a mile of the original place.

2698. GASTRIDIUM VENTRICOSUM (Gouan) Thell. Abundant on roadside between Honiton and Kilmington, Devon (already recorded for county), Mrs SANDWITH.

2711. DESCHAMPSIA SETACEA Hack. Under the name, *Aira Scabra-setacea*, this is recorded by Knapp *Grasses of Britain* t. xxxii., 1804, as having been found by Mr G. Don in pits of water on Forfar Heath (see Don *Memoir* 139 and 185). Knapp adds, "Mr G. Don, whose intrinsic merits are too little known, and whose friendship we must ever esteem." This seems to be the first Scottish record.

2713. HOLCUS MOLLIS L., var. BIARISTATUS Parn. East of Killin Pier, M. Perth, 1917, FRASER.

*2717. AVENA FATUA × SATIVA. St Philip's Marsh, Bristol, 1916, DRUCE. Var. GLABRATA. Pye Hall Farm, Suffolk, HORWOOD.

2725. ARRHENATHERUM TUBEROSUM (Gilib.) Druce. Abbotsbury, 1899, DRUCE; Studland, Dorset, etc., GREEN.

†*2727. CAPRIOLA DACTYLON Kuntze. Portmadoc, Carnarvon, 1917, DRUCE.

*2733. PHRAGMITES VULGARIS Druce, var. FLAVESCENS (Cust.). Littlestone, Dorset, GREEN.

†2737. CYNOSURUS ECHINATUS L. Pye Hall Farm, Suffolk, HORWOOD; Par, Cornwall, M. COBBE; Northampton Race Course, GOODE.

2741. KOELERIA GRACILIS Pers., var. BRITANNICA (Dom.). Swanage, Corfe Castle, Dorset, GREEN; Budleigh Salterton, Devon, GREEN & GARDNER.

†2743. K. VALLESIANA A. & G. Abundant among esparto grass, casual, Musselburgh, Edin., FRASER, *l.c.*

2745. MOLINIA VARIA Schrank, var. ROBUSTA Prahl. Beddgelert, Carnarvon, very characteristic, DRUCE. Var. VIRIDIFLORA. Benacre, E. Suffolk, HORWOOD, in *lit.*

†2754. SCHLEROCLOA DURA Beauv. Near Leeds, 1916, HORRELL.

†2755. BRIZA MAXIMA L. Swanage, Dorset, GREEN.

*2758. POA CHAIXII Vill. Very abundant at The Inch, Liberton, Edinburgh; Pittencrieff, Fife, FRASER, *l.c.*; Patshull, Staffs., DRUCE.

†2760. P. PALUSTRIS L. *Par, Cornwall, M. COBBE.

*2766. P. ALPINA L. Aran, Merioneth, STRATTON, in *Herb. Druce.*

2776. GLYCERIA MARITIMA Wahl., var. RIPARIA Towns. Southwold, E. Suffolk, HORWOOD, in *lit.*

*2783. FESTUCA SYLVATICA Vill. L. Lancashire, 1917, PEARSALL.

†2784. F. HETEROPHYLLA Lam. *In the turf, Alstonfield Vicarage. Said to have been brought from a meadow, Hereford, July 1889, W. H. PURCHAS in *Hb. Druce* as *Festuca* sp.

2786. F. DUMETORUM L. Southwold, E. Suffolk, HORWOOD, in *lit.*

2788. F. MEMBRANACEA Druce. Hayling Island, S. Hants., without personal authority in *Top. Bot.*, DRUCE.

†2794. BROMUS RIGENS L. (MAXIMUS). West of Boscombe, S. Hants., 1917, GODDARD; Kirkstall, York, HORRELL.

*2798. B. MADRITENSIS L. Near Ebberley, N. Devon, A. TRETHEWY; Saunton, N. Devon, M. COBBE.

†2802. B. INERMIS Leyss. Northampton, GOODE.

†2803. B. UNIOLOIDES H. B. K. Swanage, &c., Dorset, GREEN.

2811. B. HORDEACEUS L., var. LEPTOSTACHYS (Pers.). Wilsford, S. Wilts., DRUCE. Var. LLOYDIANUS. Portland, Chesil, Dorset, GREEN.

†2822. LOLIUM REMOTUM Schrank. Pye Hall Farm, E. Suffolk, HORWOOD, in *lit.*

2824. L. PERENNE L., var. SPHAEROSTACHYUM Masters. Tywardreath, Cornwall, M. COBBE.

2827. × Agropyron Hackelii Druce. Hayling Isle, S. Hants, with both parents, *junceum* and *repens*, Druce; Weymouth, 1899, Druce; Poole Harbour, Studland, &c., Dorset, Green.

2828. A. pungens × repens. Southwold, E. Suffolk, Horwood, in *lit.*

†2833 (2). A. patulum Trin. Kew, Surrey, 1878, Nicholson, in *Hb. Druce.*

†2851. Hordeum jubatum L. Exmouth Docks, S. Devon, M. Cobbe; Corfe Castle, Swanage, Dorset, Green; Northampton Race Course, Goode; Bristol, I. M. Roper.

*2855. Elymus arenarius L. Alien? North Bull, Dublin, N. Colgan, in *Ir. Nat.* 1917.

2864. Pinus sylvestris L. Fine trees at Traquair, Peebles, Druce.

2866. Equisetum maximum Lam., var. serotinum Braun. Hirston Quarries, Dorset, Green.

2867. E. arvense L., var. nemorosum Braun. Corfe Castle, Green; Morden, Dorset, 1916, Druce.

2871. E. palustre L., var. polystachyum Weig. Clay pits, Corfe Castle, Dorset, Green.

†2877. Adiantum Capillus-Veneris L. Garden wall, Creech Grange, Dorset, Green.

2879. Phyllitis Scolopendrium Newm., var. crispum. Coombe Copse, Swanage, Dorset, Green.

2885. Asplenium Adiantum-nigrum L., var. obtusum (Kit.). Creech Hill Wood, Dorset, Green.

2889. Athyrium Filix-foemina Roth, var. convexum (Newm.). Beddgelert, Carnarvon; Isallt, Anglesey, Druce. Var. incisum Wats. Near Bangor, Carnarvon, Druce.

2898. Dryopteris spinulosa Kuntze. Moor, Ellerbeck, Goathland, York, Little. A remarkable form, like *uliginosa* in outline, but with very different pinnae. Stansfield refers it to above.

2904. Cystopteris montana Bernh. Bidean-nan-Beinne, Glencoe, 1917, Rev. E. S. Benwell; *Skye, W. R. Roberts, in *Fern Gazette* 152, 1912.

*2909. Phegopteris Dryopteris Fée. Tatley Abbey Wood, Carmarthen, Rev. W. J. Meggison, 1860 in *Hb. Druce*; Glen, Peebles, Druce.

†2923 (2). Azolla filiculoides Willd. In the lake at Rempstone Hall, Dorset, 1916, Green.

†2932 (2). Selaginella Kraussiana A. Br. Camborne, Cornwall, an escape, W. Tresidder; Bundoran, E. Donegal, *Ir. Nat.* 1917.

*2933. Nitella flexilis Ag., var. nidifica Wallm. Wexford, Marshall, in *Ir. Nat.* 1917.

*2934. N. opaca Ag. Harwell, Notts, 1915-17, Mrs Sandwith; Glen, Peebles, Druce; Gateshaw, Roxburgh, 1871, Im Thurn (as *flexilis*) in *Hb. Druce*.

2944. Tolypella intricata (Br.). Yate, W. Gloster, Mrs Sandwith.

2951. Chara hispida L., near var. horrida Br. Freshwater, Isle of Wight, 1867, R. Tucker, in *Hb. Druce*.

2955. C. aspera Willd., var. subinermis Kuetz. Loch Leven, Fife, 1870, Stratton, *l.c.*

2958. C. fragilis Desv., var. barbata Gant. Norden clay pits, Dorset, 1916, Green.

Ajuga genevensis L. Our member, Miss Fry, found this species n Berkshire on June 13, 1918, and has conducted me to the abitat where this beautiful species is apparently indigenous. Full escription of this important discovery will be given in the next *Report*.

CHANNEL ISLAND PLANTS.

J. GAY.

JERSEY.

In the Library of Kew Gardens there are preserved several volumes of MSS. by that very excellent and critical French botanist who was sparing in his publications, but whose specimens are so often accompanied by copious notes. These volumes are a proof, if any were wanting, of his painstaking industry. A selection of them would, if published, add much to botanical knowledge. Mr F. N. Williams directed my attention to these volumes and to the fact that they included a list of Jersey plants. We are indebted to Sir David Prain for permission to publish this extract, which, it was thought, would be welcome to members. The current names are added in brackets. The botanical bibliography of Jersey is not an extensive one. Sherard visited it before 1680, for in Ray's *Synopsis* of that date the following Jersey plants are given, on Sherard's authority:—*Helianthemum guttatum*, *Geranium purpureum*, *Gnaphalium luteo-album*, *Echium plantagineum*, *Scrophularia Scorodonia*, *Sibthorpia europaea*, *Bartsia viscosa*, *Cynosurus echinatus*, and a grass, *Gramen Arundinaceum acerosa gluma*, which, he says, is "different from Parkinson's. . . . Mr Bobart will have it to be the *Gramen paniculatum folio variegato* C.B., only not stripped." This is *Phalaris arundinacea*, which is not now found in the island. A *Chara* is also recorded, but its identity can only be guessed at. Babington published his *Primitiae Florae Sarnicae* in 1839, but M. Gay made his visit in the summer of 1832, so that his records have precedence. As they are not lengthy they are inserted here. Corrected names are put in brackets. The Quenvais. — *Ammophila arundinacea*, *Glaucium flavum*, *Mathiola sinuata*, *Senebiera didyma*, *Helianthemum guttatum*, *Dianthus prolifer*, *Silene conica*, *S. anglica*, *S. nutans*, *Linum angustifolium*, *Erodium cicutarium*, *E. moschatum*, *Lotus angustissimus*, *Mespilus germanica*, *Polycarpon tetraphyllum*, *Cotyledon Umbilicus*, *Sedum anglicum*, *Petroselinum sativum*, *Crithmum maritimum*, *Foeniculum officinale*, *Centranthus ruber*, *Hypochoeris glabra*, *Carlina acaulis*, *Gnaphalium luteo-album*, *Calystegia Soldanella*, *Echium violaceum* [*plantagineum*], *Borago*, *Solanum nigrum*, var. *rubrum*, *Scophularia Scorodonia*, *Sibthorpia*, *Mentha rotundifolia*, *Marrubium*, *Statice plantaginea*, *Euphorbia portlandica*, *E. Paralias*, *Neottia spiralis* [*Spiranthes*], *Iris foetidissima*, *Scilla autumnalis*, *Allium sphaerocephalum*, *Juncus acutus*, *Cyperus longus*, *Scirpus Savii*, *Elymus*, *Asplenium marinum*, *A. lanceolatum*. St. Helier and St. Aubyn, Aug. 6, 1832.—*Sedum anglicum* (fruit), *Triticum Rotbolla* [*Desmazeria loliacea*], *Bryum capillare*. St. Pierre. — *Lepidium occidentale* Gay [*L. Smithii*], *Scrophularia Scorodonia*. Between St. Pierre and St. Ouen. —*Asplenium lanceolatum*. Cap Grosnez.—*Euphorbia portlandica*, *Plantago maritima*, var. *leptophylla* M. and K., *Cochlearia danica*, *Hypericum elodes*, *Daucus hispidus* DC. [*gummifer*], *Scirpus fluitans*, *S. Savii*, *Plantago major*, var. *minima* Duby. La Crevasse. — *Mentha hirsuta* var. Entre L'Etac and Louville.—*Aspidium Filix-foemina*. La Grève de Lecq.—*Arenaria peploides*. Entre Grève de Lecq and St. Mary.—*Calluna Erica*. St. Jean and Trinity.—*Sibthorpia*. Trinity.—*Anchusa sempervirens*. Saumarez.—*Daphne Laureola*. La Plage.—*Mathiola sinuata*, *Raphanus maritimus*, *Bromus rigidus*. St. Clement.—*Senecio Jacobaea*, *Silene gallica*, var. *anglica*, *Arabis Thaliana*, *Aspidium angulare*. Aug. 8, St. Helier sur la Plage.—*Echium plantagineum*, *Brassica Cheiranthus*. *Atriplex laciniata*, *A. littoralis*, var. *macrocarpa*. Aug. 13, Aux vaux de Méléches près St. Helier.—*Lepidium occidentale*, *Senebiera pinnatifida*, *Anchusa sempervirens*, *Stachys ambigua*, *Blechnum Spicant*, *Aspidium Filix-foemina* and var. *giganteum* (also at Coutances, 1831, Bory lui donne le nom *Aspidium acrostichoides*). Sur la route de St. Helier and St. Aubyn.—*Koniga maritima*, *Mentha sylvestris*. St. Aubyn.—*Senebiera pinnatifida*, *Oenanthe crocata*, *Scolopendrium*, *Tormentilla reptans*, *Geranium striatum*, *Triticum sylvaticum* Mönch [*Brachypodium*], *Briza minor*, *Silene gallica*, *Chrysanthemum segetum*. Quenvais.—*Triticum intermedium* Gaud. Fl. Helv. i., 363 = *T. glaucum* M. and K. Deutch. Fl. i., 705 [*Agropyron* sp.], *Linum angustifolium*, *Epilobium parviflorum*, *Armeria plantaginea*, *Aira canescens*, *Koeleria cristata*, *Rosa spinosissima*, *Erodium cicutarium*, var. *album*, *Dianthus prolifer*. St. Brelade. —*Scirpus Savii*, *Peplis Portula*, *Myosotis caespitosa*, *Cyperus fuscus*, *Lychnis dioica*. Aug. 14, Jersey Plants données à St. Helier par La Gasca.—*Poa scabra* Ehrh. [*trivialis*], *Phleum arenarium*, *Cynosurus echinatus*, *Primula grandifolia* [*P. vulgaris*], *Veronica hederifolia*, *Myosotis versicolor*, *M. hispida collina*], *Trifolium minus*, *T. filiforme*, *T. suffocatum*, *Trigonella ornithopodioides*, *Geranium striatum*, *Lepidium occidentale* [*Smithii*].

Mt. Orgeuil.—*Smyrnium*, *Plantago major*, var. *minima* (with a description). *Armeria maritima*, common in Jersey and Guernsey. *Mentha hirsuta*, a remarkable variety of this species at La Crevasse, between Le Tac et Liouville. St. Aubyn, on *Ulex europaeus*, *Cuscuta Epithymum*.

GUERNSEY.

Aug. 8, St. Martin and dans le voisinage.—*Lychnis sylvestris*, *Chrysanthemum Leucanthemum corymbosum*, *Hieracium Pilosella*, var. *Peleterianum*, *Jasione perennis*, *Raphanus maritimus*, *Euphorbia portlandica*, *Asplenium lanceolatum*, *Lepidium occidentale*. Aug. 10, Cobo.—*Lepidium latifolium*, *Scrophularia aquatica*, var. *Balbisii*, *Cyperus longus*, *Lavatera arborea* (cult.). Entre Cobo and l'Eglise du Vale.—*Diplotaxis muralis*, *Pyrethrum inodorum*, var. *maritimum*, *Mathiola sinuata*, *Raphanus maritimus*, var. *albus*, *Juncus acutus*, *Ruppia rostellata*, *Lagurus ovatus*, *Phleum arenarium*, *Arenaria peploides*, *Convolvulus Soldanella*, *Herniaria glabra*, *Scilla autumnalis*, *Rosa spinosissima*, *Senecio erraticus* Bert., *Stachys arvensis*, *Fumaria media* Lois., *Veronica agrestis*, *Briza minor*, *Polycarpon*, *Oxalis corniculata*. Orobanche in Hederae radicibus parasitica Espèce fort curieuse qui m'est inconnue et qui ne peut être l'Orob. Hederae. Je l'ai trouvée au Vale Guernsey quelques échantillons seulement etaient en bon état de fleuraisons, les autres en fruit. *Jasione perennis*, St. Martin, Guernsey, rochers maritimes, Le vrai *montana* se trouve toute à côté là où il y a terre. [This requires verification. True *perennis* is usually an inland species.]

Senecio erraticus Bert. Vale, Aug. 10, 1832. Il est fort rare à Guernsey (and vainly sought for in Jersey).

Chrysanthemum Leucanthemum, var. *multiflorum-corymbosum*. Variété fort remarquable par son port et que j'ai lieu de croire particulière à la zone maritime occidentale; elle est très commun à Jersey et à Guernsey.

Chrysanthemum = *Ocellaria propinqua*. Grosnez, 1832.

The La Gasca mentioned by M. Gay is the Spanish botanist who was born in Arragon on October 4, 1776. He published in 1816 *Elenchus Pl. quae in Hort. Matritensi* and *Genera et Species*. Owing to political troubles, in which he lost his fortune, his library, his MSS. of the Flora of Spain, which had cost him twenty years' labour (see Hooker's *Bot. Misc.* i., 49-78), and his *Monograph of the Cerealia*, he took refuge in London in 1824 (teste Colmeiro), where he lived till

1831. There he discovered and made known under its modern name *Polygonum mite*, which had previously been published by Dillenius in Ray's *Syn.* 145, 1726, and of which a Chelsea specimen is still preserved at Oxford (see *Dillenian Herb.* 54). In 1827 he issued a *Hortus Siccus Londinensis*, of which eighty specimens are in the writer's possession. It contains perhaps the earliest known British specimen of *Euphrasia stricta.* In 1831, on account of his health, he had to leave London (there are no stairs so steep as those trodden by an exile's feet), and he took up his residence in Jersey, remaining there from 1831-34, where M. Gay met him and to whom he gave the foregoing notes. In 1839, on his return to England, he compiled a list of Jersey plants, dated October 1834, which appeared in the *Report of the Jersey Agricultural and Horticultural Society* for 1839. In it there are many errors, but it has scarcely received adequate attention. His story is a most pathetic one. He died in his native land in Barcelona on June 23, 1839. He was certainly the first to add *Orchis laxiflora* and *Bromus rigens* (*maximus*) to the flora of Jersey. In 1836 Mr W. C. Christy visited the Channel Islands and published his results in the *Mag. Nat. Hist.*, ser. 2, i, 25, 1837, and in the autumn of the same year Mr Joseph Woods, the author of the *Tourist's Flora*, spent a few days there (*Hook. Bot. Comp.* ii, 278). His list is a good one, and the additions include *Scirpus americanus*, *Festuca sabulicola*, *Brassica Cheiranthos.* His *Echium violaceum* is doubtless *E. plantagineum.* In 1839 Mr W. C. Trevelyan records *Echium italicum* and *Statice plantaginea* (*Linnaea* xiii., 55, 1839). Was the former a mistake for *plantagineum*? Professor Babington's *Primitiae Florae Sarnicae* appeared in 1839. In 1853 M. J. Piquet published a list of Jersey species in *Phytologist* iv., 1093, 1853. In 1894 E. Duprey, in the *Bulletins Annuels de la Société Jersiase*, gave a list of the plants of Mount Orgeuil, and a list of Phanerogams and Ferns, by M. J. Piquet, appeared in the same publication in 1896. For Guernsey the first plant mentioned is *Juncus capitatus*, published in Symon's *Synopsis* of 1798. In 1815 in Berry's *History of Guernsey* is a list of plants which had been compiled by Joseph Gosselin in 1788. These were inserted by his grandson, Thomas William Gosselin, and numbered 528 species, 55 of these being Mosses, Hepatics, and Lichens. It is a very valuable and trustworthy compilation, which received a quite inadequate recognition on the part of the young Cambridge botanist in his *Primitiae.* It is interesting to note that our member, Miss Trower, is a descendant of Mr Gosselin, and that the very excellent *Flora of Guernsey* by E. D. Marquand and the compact and useful *Flora of Jersey* by L. V. Lester-Garland are both compiled by members of our Club.

JOHN RADCLIFFE, BISHOP OF LONDON, AS A BOTANIST.

This distinguished ecclesiastic, the son of the President of Corpus Christi College, was born at Oxford on July 6, 1749. He eventually became Professor of Divinity there, an appointment which in 1783 carried with it the Rectory of Ewelme in that county, and which he relinquished in 1799 on becoming Bishop of Oxford. In 1807 he was translated to Bangor. Two years later he was confirmed Bishop of London, the See of which he filled till his sudden death from apoplexy on July 1828 at Much Hadham, in Hertfordshire, where he was visiting his son, the Rector. In 1917 Sir W. Osler, Bart., F.R.S., the Regius Professor of Medicine at Oxford, who is Keeper of the Ewelme Hospital, purchased in London an interleaved copy of Sibthorp's *Flora Oxoniensis*, which had a large number (over four hundred) references to plants growing at or near Ewelme. There was, however, no mention of the writer's name. He sent it me to see if the authorship could be traced. Local allusions suggested that he was resident at Ewelme, and might have been the Rector. The date enabled me to see who was Rector of Ewelme at that time, and a couple of visits to Ewelme, through the kindness of the present Rector, who allowed me to inspect some undoubted writing of Radcliffe's preserved there, showed that the writings were identical. This proved what had hitherto been unsuspected, that the Prelate had an excellent knowledge of Botany, and was acquainted with the writings of Scopoli and other botanists. The list adds one species, *Polygonatum multiflorum*, to the county flora. His directions were so precise that I was able to find it there last July. This book of Sir W. Osler's therefore allows us to claim Bishop Radcliffe as a botanist, and one who made a valuable contribution to the local Flora. The complete list is published in the annual *Report of the Ashmolean Natural History Society of Oxfordshire* for 1917.

FERDINAND BAUER AND HIS LANDSCAPE DRAWINGS.

Allusion was made in the last *Report*, p. 518, to the acquisition by Mr C. C. Lacaita of a copy of Sibthorp's *Flora Graeca*, the thousand magnificent plant figures in it being painted by Ferdinand Bauer, who also supplied a small water-colour view to each volume. These are (1) Mons Parnassus, 1806; (2) Mons Athos, 1813; (3) Mons Olympus, 1819; (4) Byzantium, 1823; (5) Hellespont, 1826; (6) Athens, 1827; (7) Corinth, 1830; (8) Mons Athos from the sea, 1833; (9) Physcus, 1837; (10) Delphi, 1840 the dates being the years of publication of the volumes. The original superb drawings of the plants, together with the plants themselves, are one of the glories of Oxford, and are preserved at the Library of the Botanic Garden. Many years ago two drawings came into my possession which proved to be the originals of the frontispieces, Nos. 8 and 9, but nothing further is known as to the whereabouts of the remaining eight. No evidence existed so far as I am aware that Bauer had painted any views of Greece. This last year, however, by good fortune, there came into my hands by purchase a portfolio of 131 sepia-paintings drawn by him. The actual drawings measure 17½ by 11½ inches, on boards 20½ by 14¾ inches. They are all numbered and are in the sequence of their journey, and are signed "Ferd. Bauer, del." On the whole they are of the high order of excellence which his floral pictures would lead one to expect. That such an important collection should come to Oxford, where his flower paintings are already preserved, is a matter for congratulation. This artist, Ferdinand Bauer, was born at Feldsberg, in Austria, in 1760. his father being Court painter to the Prince of Lichtenstein. From a boy he was a painter of flowers and birds, and when 15 was employed by Father Boccius, the Superior of the Convent at Feldsberg, to paint flowers, and 16 volumes in folio are still preserved in the Lichtenstein Palace at Vienna. Sibthorp on his journey to Greece in 1786 passed through that city, and when there examined the unique MS. of Dioscorides. Nicolas Jacquin, botanist to Emperor Joseph II. of Austria, not only gave Sibthorp one of the three copies of the plates of Dioscorides, and that the most complete one, which is now in the Botanic Gardens Library, but he introduced him to Boccius, where at Feldsberg he first met Bauer. Being struck with his ability, he engaged him as his artist and companion on the Eastern journey. On their return to England in 1787 Bauer devoted himself to finishing the drawings for the *Flora Graeca*. Sibthorp made another journey to the East in 1794, and died shortly after his return in 1796. Bauer, who on his journey with Sibthorp discovered several plants himself, was especially diligent in collecting in Cyprus. In 1801 he was appointed draughtsman to the expedition to *Terra Australis*, commanded by Capt. Flinders, at a salary of £300 a year, with rations for himself and servant—terms which show the estimation in which he was then held. The Admiralty, moreover, allowed the artist to retain all drawings not required for publication and the specimens. During this expedition Bauer painted 700 complete drawings. In company with Robert Brown, Bauer spent some time in Australia, eight months being on Norfolk Island, where he collected the material for Endlicher's *Flora* of that district. In February 1802 Flinders named a cliffy head in his honour as Cape Bauer. In 1813 he began his illustrations of the *Flora of New Holland*, a work which did not prove remunerative. He was also employed by Bourke Lambert to illustrate the monumental work on the *Genus Pinus*, which began in 1810. In 1814 he returned to Austria with drawings of 2000 specimens of plants, his herbarium, and collection of skins. There he bought a small house at Hitzing, near Schönbrunn. In 1819 he again visited England, but soon returned to Vienna, where he died in 1826.

THE HERBARIUM OF MR CHARLES BAILEY.

By a deed of gift executed in June 1917, Mr Charles Bailey, our Secretary from 1878 to 1902, presented to the University of Manchester the enormous Herbarium which he has been accumulating since 1861, and which is one of the most complete British and European collections ever made by a private individual. To the *Manchester Memoirs*, vol. lvi., n. 5, 1917, Mr Bailey contributes most valuable details respecting its arrangements, contents, and sources. From this paper the following details are abstracted; and one only regrets that space does not allow the whole of it to be printed, since the methods of indexing and arranging the great continental gatherings are of great practical importance. Mr Bailey has not only presented the herbarium but, with characteristic generosity, has given his library which contains not far short of 8000 volumes, his magnificent collection of microscopic slides and £500 to complete the mounting of the specimens. One must bear in mind that this enormous collection was made during the leisure hours of a very busy life (for a long time Mr Bailey was a partner in Ralli Bros., Manchester) and while he was the Secretary of this Club, to which he afforded very considerable pecuniary assistance as well as secretarial help. As he well says: "Every herbarium represents part of its founder. It will show his weakness and his strength, his preferences, idiosyncrasies and fads. It will disclose his accuracy or otherwise in the records which it includes; his acumen, or the lack of it, in appreciating the facts and ways of nature. It embalms the friendships of his life, the botanical stimulus which he has received, the countries which he has visited. It tells of hairbreadth escapes by land and water; it reminds him of threatened arrests for trespassing or poaching. Its accumulations testify to the life-giving and life-sustaining pursuits with which its collections have been brought together. It has undoubtedly introduced him to a long roll of the most worthy and lovable of his fellow-creatures. The foundations of a good herbarium rest upon a thorough grounding in the main facts of structural and physiological botany. . . Some particulars therefore of this . . . . Herbarium will be of interest to future users. It consists of four portions:—(a) British Plants, (b) Native European and Mediterranean Species, &c., (c) Mosses and Lower Cryptogams, (d) American and Extra European Plants. These are kept upon uniform sheets measuring 17½ by 11½ inches. The sheets are enclosed in . . . boxes measuring externally 18 by 12 inches, the lids being as deep as the boxes" [this has the great advantage of keeping out dust and insects]. "The British portion is arranged according to the sequence of species adopted in Druce's *List of British Plants*. Each box is labelled with Druce's numbers (Oxford Jan. 1908) and with the numbers in the 10th edit. of the *London Catalogue*. The continental portion follows the sequence of Nyman's *Conspectus Florae Europeae* and its Supplements. . . . The British pecies and named varieties and forms in Druce's *List* and the equence of the sheets under each species follows the order of counties or vice-counties adopted by H. C. Watson in his *Topographical Botany*, while the Irish localities follow the divisions of the Irish flora adopted in . . . the *Cybele Hibernica.* The plates of Sowerby's *English Botany*, Fryer's *Potamogetons* and Hanbury's *Hieracia*, &c., are included. In the Continental portion of the herbarium the species stand in the exact order of Nyman's *Conspectus*, and their position is shown by the numbers stated on the outside of the boxes. . . A copy of the *Conspectus* is marked with corresponding numbers of the boxes and of their contents." Species or genera not included in the *Conspectus* are intercalated in the position assigned to them in Durand's *Index* to Bentham & Hooker's *Genera Plantarum.* It may be added that Mr Bailey has cut up four of the best European Floras, so that the descriptions of the plants pasted on each box are at once available for consultation. It is somewhat curious that quite independently the writer also has arranged the very large European collection in the Oxford Herbarium in the same manner, and that the sequence of the species (not the genera) in the *Conspectus* is also followed. It is hoped that the younger Universities, or, indeed, the keepers of any other collections, will hesitate before they throw over the sequence of Bentham & Hooker's *Genera* for the sake of adopting Engler's arrangement, which so many younger teachers have been running for all or more than its worth.

"Besides the sequence of species, a sequence of the geographical areas has been observed throughout the entire herbarium," both for British and foreign species. This is very fully and clearly explained by Mr Bailey, who has divided the European countries into 29 groups. He also gives on six pages the sources of collection, most of the classic exsiccata being represented. His British collection is contained in 760 boxes, and numbers 88,822 sheets; the Continental is contained in 2,417 boxes, holding 208,597 sheets; the Exotic species occupy 21,239 sheets. Mr Bailey has also been generous enough to give to Queen's College, Belfast, 6000 sheets of Continental plants.

This magnificent gift to Manchester University, supplemented as it is by the enormous, chiefly extra-European Herbarium, numbering over 225,000 sheets, given by our member, Dr J. Cosmo Melvill, will put the Manchester Herbarium in the front rank. Its possession can scarcely fail to stimulate the love and interest in systematic Botany. Under the careful superintendence of Professor Weiss we can be sure that it will be most carefully housed, preserved, and made of good use.

MISCELLANEOUS NOTES.

THE NATIONAL TRUST FOR PLACES OF HISTORIC INTEREST OR NATURAL BEAUTY. REPORT 1916-17. On p. 4 the acquisition f the Ruskin Reserve at Cothill, Berkshire, is recorded. The land as been transferred by the Ashmolean Natural History Society of Oxford, and the property is in future to be managed by a Committee consisting of Professor Poulton, F.R.S., and Mr G. Claridge Druce, as fe members, and Messrs Eccles, H. J. Evans, F. A. Bellamy, the President and Secretary of the Ashmolean Society, and the Rev. H. ourdain. The area has a rich flora and fauna.

BLAKENEY POINT. Report 1915-16. This gives a list of the ources of twenty different pebbles. Photographs of the Glaux Low n 1913 and 1916 are given. Here a new Alga, *Carteria Oliveri*, as been discovered.

BOOKS IN PREPARATION.

We regret to hear that Arnold Lees' YORKSHIRE FLORA and the FLORA OF SALOP are for the time held up owing to the lack of financial pport. The writer's FLORA OF BUCKINGHAMSHIRE and NORTHAMPONSHIRE and the second edition of the FLORA OF OXFORDSHIRE cannot present be printed, so that additions are still valued.

In the press and shortly to appear THE ADVENTITIOUS FLORA OF WEEDSIDE by Miss I. M. HAYWARD and G. C. DRUCE. This will ontain the description of about 350 wool-aliens from that area, and a st of all the adventitious species of the area. It will be illustrated ith about 80 plates.

CORRECTIONS, &c.

eport 1916—

p. 408. Line 19. For "Bucknor," read "Bicknor."
p. 408. Line 23. For "Glamorgan," read "Brecon."
p. 470. Line 18. For "MECANOPSIS," read "MECONOPSIS."
p. 476. Line 20. For "Whitehorn," read "Whiteford."
p. 483. Line 13. For "Partington," read "Parrington."
p. 483. Line 14. Higgens' *Fragaria moschata* from Surrey is *virginiana*, as is probably the Hertford specimen.

Report 1916—

p. 498. Line 22. "For "Satureia Calamintha," read "Melissa officinalis."

p. 501. Line 11. Polygonum mite should be deleted, as the specimens are not correctly named.

p. 504. Line 22. For "Scorodprasum," read "Scorodoprasum."

p. 513. Line 23. For "*decapitatus*," read "*decapetalus*."

p. 513 Line 31. For "*Carthamnus*," read "*Carthamus*."

p. 519. Line 5. For "Grahamstown," read "Johannesburg."

p. 520. Line 31. For "Galium pusillum," read "Galium pumilum."

Report 1913—

p. 343. Line 32. For Chaeturus fasciculatus read Poa pratensis L., var. vivipara.

PERSONAL NOTES.

Mrs Adams, F.L.S., 14 Vernon Road, Edgbaston, and Miss Trower, Stansteadbury, Ware, Herts., are painting British plants. Would members who are willing to assist in supplying specimens kindly let them know? The latter specially needs British *Rubi*.

F. J. Hanbury, Esq., Brockhurst, East Grinstead, is anxious to have seeds of rare British species. He will defray all expenses.

W. Norwood Cheesman, Esq., J.P., The Crescent, Selby, York, will be glad to receive or exchange specimens of *Mycetozoa*.

Rev. T. Stephenson, Epworth, Aberystwith, wishes to have living specimens of *Liparis*, *Spiranthes* species, *Corallorrhiza*, *Helleborine atroviridis*, and any hybrids.

Mr G. C. Druce, Yardley Lodge, Oxford, would like fresh specimens of the Marsh Orchids, stating their precise habitat, also fresh Orobanches.

Mr T. A. Dymes, F.L.S., Carthona, West Drayton, Middlesex, wants ripe capsules of *Cephalanthera*, *Herminium*, *Spiranthes*, *Neottia*, *Goodyera*, *Helleborine latifolia* and *Orchis mascula*, *Morio*, *pyramidalis* and *ustulata*

UPPLEMENT TO REPORT OF BOTANICAL SOCIETY AND EXCHANGE CLUB FOR 1917,

BY

E. S. GREGORY.

OME NOTES ON BRITISH VIOLETS, WITH ADDITIONAL LOCALITIES.

Since "British Violets" was published in 1912 I have had pportunities for further study of the genus *Viola*, and have added otes from time to time in the interleaved copy which I use. It may e worth while to give other botanists who are interested the result of y research. In addition to the study of many dried collections I ave been allowed to use a piece of ground in the Cambridge Botanic ardens for the cultivation of rare and interesting forms, and am onvinced that only in some such way can we arrive at a full nowledge of any genus, unless we have access to the plants in their wn habitats at all times of the year. For instance, plants from South evon which appeared to fulfil many required characters for the *Viola iaphila* of Koch, even so far as to have perfectly glabrous capsules n their early stage, were watched carefully and were found to develop fringe of hairs on each angle of the fruits as they approached aturity. It is possible that Koch's plant behaved in the same way ithout having been observed. Again, a plant which I had labelled . *hirta*, var. *lactiflora* bore perfectly white flowers during the first looming; these faded, and were almost immediately succeeded by a resh crop of flowers of a pale mauve colour. Unlike the fruit of . *hirta* type the capsules of this plant were glabrescent. There is lso my forma *gigas*, of V. *hirta* × *odorata*, described at length in he *Rep. B.E.C.* 403, 1916. The description is abridged in these otes.

The Rev. H. J. Riddelsdell has very kindly helped me, not only by sending me many interesting specimens, but by reducing to order some of my rough notes. He has also supplied me with a long list of new localities.

VIOLA ODORATA L.

Var. *violacea* does not appear to be as common as var. *dumetorum*, and is often confused with var. *praecox*. I have however good examples from Maidencombe. Devon S. Between Worle and Banwell, Somerset N., this variety grows abundantly with vars. *dumetorum* and *subcarnea*.

Var. *praecox* Greg. is reported from Tiverton, Devon S.; Braunton, Devon N.; Ham Ponds, Kent E.; Oxfordshire; Cirencester; Almondsbury Hill; Glamorgan.

Var. *dumetorum* Rouy et Foucaud. Gloster E. and W.; Glamorgan. This name is already used in *Leucorum Prahl. Kut. Fl. Sch. Holst.*, p. 22 (1890) = *V. alba* auct. plur. non Besser. Besser's species, *V. alba*, has triangular, hairy leaves; stipules with teeth as long as the stipule's breadth; white, scented flowers, with white spur: a smallish plant, not yet recorded for Britain.

Var. *rubra-purpurea*, nov. var. A highly scented reddish violet, from Newquay, 1915. It had been growing there in an orchard for many years. Transplanted into my trial-bed in the Cambridge Botanic Gardens, it has bloomed profusely this year (1917). Miss Roper has since found what appears to be the same variety near Bitton, Gloster W.

Var. *subcarnea* Parl. Additional localities have been found in Gloster E. and W.

F. *imberbis*. Mr P. M. Hall writes (29th April 1914): "In March and April I paid particular attention to f. *imberbis* Leighton. I observed that each variety of *V. odorata*, *i.e.*, type, *praecox*, *dumetorum* and *subcarnea*, has a corresponding *imberbis* form." Mrs Wedgwood sent me an *imberbis* form of *V. hirta* × *odorata* (*subodorata*) from a copse near Lewes (16th Feb. 1913). F. *imberbis* is recorded also from Odiham, Hants N. (Herb. C. E. Palmer); Compton Dando (white-flowered); also Devon S.; Somerset N.; and Gloster W.

F. *inodora*. Stokeinteignhead, Devon, March 1913.

HYBRIDS OF V. ODORATA.

Hirta × < *odorata* (= *V. sepincola* Jord.). Gloster E. and W., Rev. H. J. Riddelsdell; Harting, Sussex W.; Bubb Down, near Chetnole, on chalk, Dorset; in Herb. Rev. Moyle Rogers. There is also an intermediate between × *sepincola* and × *multicaulis*, in the same collection, from hedgebanks between Plymton and Elburton, Devon S. My note (*Brit. Violets*, p. 13) regarding the flower colour of this hybrid must be qualified. In 1913, at Maidencombe, Devon S, I found × *permixta* with dark flowers, as described by Jordan. The same dark-flowered form was sent to me by Mr P. M. Hall, from Woodstock, Oxon.

V. hirta × *odorata* (= *V. multicaulis* Jord.). Gloster E., Rev. H. J. Riddelsdell; Braunton Burrows, Devon N, W. P. Hiern; Lockley's Wood and Harmer's Green Wood, Welwyn, Herts., Rev. W. Moyle Rogers; North Leigh, Oxon, and Basildon, Berks, 1914, P. M. Hall. A white-flowered form has been found by Miss Peck in Devon S.

V. hirta × *odorata* (= *V. collina* Besser). A fine example of this hybrid was distributed through the *B.E.C.* in 1911 from Alveston, Gloster W., by Mr J. W. White.

V. hirta × *odorata* f. *gigas*. Found originally (see *B.E.C.*) March 1913 by E. S. G. at Stokeinteignhead, Devon S. Fls. averaging 3 cm. in length and breadth; stipules 8 mm. broad at base and for two-thirds of their length, with concave tip, suddenly narrowing; fls. of exquisite pale mauve colour, with large white eye; lateral petals very much inflected; the whole plant of a thick texture, recalling that of *V. odorata* var. *floribunda*: leaves rounded at apex, hairs slightly depressed; flowers scentless on long peduncles (11-12 cms.); bracts 1 cm. long × 5 mm. broad at base; spur thick, hooked, purple: sepals broad, obtuse. I suspect this new form to be a cross—var. *dumetorum* × var. *hirsuta*.

V. HIRTA L. Gloster E. and W.; Glamorgan; and also var. *vulgaris*, Rev. H. J. Riddelsdell.

Var. *oenochroa* Gillot. Kingley Bottom, Sussex W., P. M. Hall; Bude, Cornwall, Rev. H. H Harvey. Rouy says:—"Pl. moins dévelopée, pétales d'un violet pourpre ou lilacé."

Var. *pinetorum* Wiesb. Cornwall E.; Somerset N.; Gloster E.

Var. *propera* Jord. Cornwall E.; Devon S.; Sussex W.; Oxon; Gloster E. and W.

exists a vast series of intermediates between *V. rupestris*, var. *arenaria*, and *V. Riviniana*, f. *minor*.

I have come to a conclusion (29th June, 1917) after much careful study that *V. rupestris* and vars. are distinguished from allied *V. Riviniana* forms by broader (twice as broad) stipules with *canina*-like teeth (see Teesdale plants), and through this conclusion have advised Mr Riddelsdell that some of his plants from Tidenham Chase, Gloster W., belong to *V. rupestris*, var. *glabrescens* Neum. F. *alba* of this variety, also from Gloster W., and other specimens of the variety itself from Bourton Downs, Gloster E. A specimen from Tidenham Chase has all its parts except the peduncles hairy, scarcely downy. The same variety, or a plant very near it, has been seen from the Clova mountains, Forfar.

Var. *arenaria* Beck. Stipules not narrow in the same sense as in *V. Riviniana*—really as broad again and toothed more sparsely with *canina*-like teeth.

V. CANINA L. Additional records: Oxon; Bucks; Gloster E. and W.; Glamorgan; Radnor.

Var. *ericetorum* Reichb. Devon N. and S.; Wilts. N. and S.; Dorset; Hants S.; Gloster E. and W.; Brecon; Lancs S.

Var. *pusilla* Bab. Devon N. and S.; Somerset N.; Dorset; Hants S.; Middlesex; Norfolk E. and W.; Cambridge; Gloster E. and W.; Lancs S.; Westmoreland; Forfar.

Var. *sabulosa* Reichb. Devon N. and S.; Godlingstone Heath.

Var. *lanceolata* Martin-Donos. "The more I see of this violet, especially of the flowering branches, the more confident I feel that *V. lactea* is somewhere near it and has a share in its parentage." This extract is from a letter I sent to Mr White in March, 1917, on his Yate Common violet, mentioned in "British Violets" (p. 83), under var. *lanceolata* of *V. canina*. The mystery was cleared in the summer of 1917 by the finding of *V. lactea* on Yate Common, and the misunderstood plant falls into place as *V. canina* × *lactea*. Var. *lanceolata* (apparently genuine); Gloster W.; Derby; Lake Lancs; Forfar.

Var. *crassifolia* Grön. Coast sand hills, Newton, N. Uist, W. A. Shoolbred. Gloster W.; Hereford.

V. CANINA × STAGNINA. Wicken Fen, Cambridge, Herb. Rev. W. M. Rogers.

V. LACTEA Smith. Helston, Cornwall; Devon N. and S.; Stony Cross, Hants; Tunbridge Wells; Dorset; Surrey; Somerset; Southampton; Anglesea; Glamorgan; Berks; Bucks; Yate Common and Tidenham, Gloster W. (with a sobole); Co. Clare.

V. LACTEA × RIVINIANA. Somerset S.; St Miniver, Cornwall; Gloster W.

V. CANINA × LACTEA (= *V. lactea*, var. *intermedia* Wats.). Dorset; Gloster W.; Fleet Pond, Hants; Devon S.; Cornwall E. and W.; Surrey; Glamorgan; Pembroke.

V. lactea, var. *pumiliformis* Rouy et Foucaud. Devon N.; Gloster W.; Mullion, Cornwall; Isle of Wight.

V. CANINA × LACTEA × RIVINIANA. Good examples of this ternary hybrid in Rev. H. J. Riddelsdell's collection, from Tidenham Chase, Gloster W.

V. stagnina Kit. Menmarsh, Oxon. "In the wettest part of a big field where grows *V. canina*, var. *lanceolata*. Also a hybrid very near *V. stagnina*. but with bluer flowers and broader leaves, probably *V. canina*, var. *lanceolata* × *stagnina*" (P. M. Hall). Originally found there in 1812. See spec. in Herb. Oxon; also from Notts.

NOTES ON THE BRITISH ORCHIDS

CHIEFLY THE PALMATE SECTION

By G. CLARIDGE DRUCE.

It has been thought desirable to bring together the scattered otes relating to this critical group, adding the information obained during the past four years' field work in many counties, and e light it has thrown upon certain hybrids, as well as varieties, of rchis and *Habenaria.*

2326 (2). ORCHIS PRAETERMISSA Druce in Rep. Bot. Soc. & E.C. 40 (1913), 1914 ; *Satyrium foemina* Blackwell Herbal, t. 405, 1739. adly drawn and coloured ; *O. incarnata et latifolia,* auct. var.

The following descriptions, slightly modified from the original fter examining thousands of specimens, with measurements of e leaves and labellum, are here given for convenience of members :

Root—Two (three) palmate tubers, with long cylindric rootlets. em—Hollow, 1—8 dm. high and up to 3·5 c.m. circumference. eaves—Linear to oblong-lanceolate, varying in breadth ; up to 1 cm. long by 5.5 cm. broad, narrowing from a broad base upards to the usually hooded or thickened apex, usually gradually ; ometimes a little broader near the middle, but even then with a oad leaf-base only slightly narrower than the widest part of the af ; yellowish green, sometimes greyish or darker green, unspotd, erect or ascending. Bracts—Often coloured, as long as, or nger than the flowers, sometimes leafy, conspicuous. Infloresnce—A cylindric or subconical spike up to 17 cm. long, somehat loose when mature, showy. Flowers—Conspicuous, of varits shades of dull-rose purple, often of the colour of *Rhododendron nticum,* reddish, rarely dark crimson, purple, or white. Lip rge, broad (as broad or broader than long), flat before fertilisaon, the sides sometimes ultimately reflexed, more or less disictly three-lobed, the central lobe smaller and slightly longer, as ng as, or slightly shorter than, the lateral lobe ; thin flexible in xture, usually about 12 mm. broad by 9 long : the central lobe en present up to 2 mm. long. Sometimes the flower is almost concolorous; at others it is more or less strongly marked with darker shade than the ground colour, with more or less defined dots, lines or blotches: sometimes with a geometric pattern with defined margins (usually this is the case where there is a trace of *O. Fuchsii,* or rather its occurrence suggests hybridity). Viewed from the front, the flower looks broad and showy. Upper petals converging into a hood. Upper sepals usually paler, divaricate. Spur shorter than ovary, curved, cylindric. Flowering usually 10 to 14 days later than *incarnata*, with which it often grows in permanent moisture, less frequently in dryish grassy places, and very rarely on chalky banks.

A claimant for admission to rank among British species is rightly closely criticised, the onus of proof resting with the proposer: therefore no grumbling at adverse criticism, nor resentment towards those who for a time refuse to acknowledge the interloper, can of course be entertained. The history of several plants now acknowledged to be good species is illuminative. There is the period when its claims are derided, ' there is nothing in it '; then perhaps doubts are cast upon its indigenity, and quite likely there will be suggestions that it is a hybrid, or monstrosity; eventually a further stage is marked by the assurance that ' everybody always knew that it was a distinct species.' Slightly travestied, this is a not unnatural history, and has its prototype in the body politic. With regard to *praetermissa,* the last stage seems to be approaching. The way was paved for such a culmination when Mr. C. B. Clarke read his paper on the true *incarnata* of Linnaeus, which assumed the existence of an *Orchis* distinct from the Linnean *incarnata.* To convince those who are still sceptical, it may be said that there are at least two ways in which a botanist will be led to consider it not a true species—(*a*) by consulting ordinary descriptive Floras; (*b*) by examining the badly-prepared specimens which too often represent the palmate Orchids in Herbaria. One must not imitate the mediæval botanists who tried to identify every western species among the eastern plants of Dioscorides. Nature must be the teacher, and in her book the student will, by careful examination, have little difficulty in seeing *praetermissa,* and in distinguishing it from its congeners. There are, however, certain obstacles in the way,—it has a range of variation of its own which is not yet fully ascertained; being perennial, there is a certain variation due to age, and it readily hybridises with its allies. There seems good reason to suppose that the hybrids themselves recross, and that possibly there are more than two species represented in some individuals. Neither must soil and edaphic influences be lost sight of as a factor in variation.

Three classes of objection have been raised against the specific grade of *praetermissa.* (1) That the description is so vague [that there is nothing in it]. This scarcely requires explanation. Botanical species have not the rigid outlines of a geometric figure. The description is not drawn from a single herbarium specimen, which, however rigidly it might expound an individual, would be useless in the field when one is dealing with a species having quite a large series of variations, often parallel to those in the allied species. The salient features are, however, given in the original description, and it is hoped are sufficient to enable a person of ordinary botanical intelligence to correctly identify the species in question. (2) 'It is presumably a hybrid.' If so, what two species are the parents? Do hybrids usually occur in the proportion of nine to one of the parents? Does a hybrid yield seeds which (so far as the original experiment went) produce seven individuals all like each other and the parent? Proof is required that *pure praetermissa* seedlings break away towards one or other of the assumed parents. No such proof has been advanced. The only possible parents could be true *incarnata* and aggregate *maculata,* or what is called *latifolia.* These are normally pale-flowered species. Why should the vast proportion of *praetermissa* show purplish flowers? Why should the spotted leaves of *maculata* not be reproduced? And, as more cogent reasons, why should *praetermissa* be found where type *incarnata* is not present, and in those cases where the species grow in proximity the great majority of individuals of pure *incarnata* are long past fertilisation before *maculata* has its pollen ready for dispersal? (3) It has been asked: 'Why cannot I make out *praetermissa* from the *Student's Flora, English Botany,* or the *Manual?'* One could scarcely write of Victorian Art if one had only Tudor Literature to consult; the descriptions of the palmate orchids in text-books are avowedly incomplete.

The reasons which lead one to consider *praetermissa* a good species are as follows: That although it is on the whole more closely allied to *incarnata*, with which it had long been confused, than any other species, there are such widely divergent, and not necessarily vague, differences as to prevent the one being treated as a variety, race, hybrid or form of the other. The question of sub-species can now only be incidentally discussed. Smith believed that what he called *latifolia,* which was in the main *praetermissa,* including *incarnata* and their hybrids, and *maculata,* in the aggregate sense were all one species. Even Boswell Syme united (what he called) *incarnata,* which was also mainly *praetermissa* (although the figure, execrably coloured, is *incarnata*, and (what he called) *latifolia* under one species—his *O. palmata* (a name not cited in the *Kew Index*). The first great distinction between the two plants is that over the great portion of its area *incarnata* flowers 10 to 14 days in advance of *praetermissa,* as do also the two species of Hawthorn, *Crataegus oxyacanthoides* and *C. monogyna.* In both cases exceptions are to be found, and plants of the two species or orchis and *Crataegus* are in flower together, but this is the exception, not the rule. An essential difference, as at present ascertained, appears to be in the *size and texture of the labellum.* This is rarely more than 7 *mm.* in *incarnata,* even when pressed flat: in doing this, from its more brittle texture, the labellum often splits.* Compared with this small-sized labellum may be contrasted the average dimensions of the labellum of *praetermissa,* viz., 12 mm. broad by 9 long. Again, the outline is usually less angular, lozenge shaped or oblong, and is nominally rounded in outline. It has a distinct range of colouring, but, so far, the curious flesh-coloured tint of *incarnata vera* has not been seen, and when *incarnata* takes on red or dark-purple colouring the tints are brighter than in the corresponding *praetermissa* series. The shape of the labellum is never oblong, and the middle division is much more rarely prolonged into a point (t. ix is from a cultivated specimen, not infrequently the change to a more porous soil accentuates this character); the texture is thin, and the labellum readily flattens under pressure, even when it has become reflexed. No special stress is placed on the characters afforded by the foliage, stem, and bracts.

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*For the purpose of examination in the field marginal strips of adhesive stamp-paper may be used, on which the locality, date, and description of the leaves, &c., are noted. Then cutting off the labellum one attaches it at once to the moistened gummed-paper, pressing it flat, and putting it in the pages of a pocket-book under the pressure of a strong elastic band. In this way the colour and markings to some extent, and its shape and size, are retained. The spur, sepals and petals can be also attached, and a number, which corresponds to one on the individual plant, makes the specimen complete and ready for adding to herbarium. The plant itself (having the stem split to show its hollow character) with the leaves up to the flower, is dipped in boiling water. It is necessary to add a note as to the leaves being spotted or unspotted, as after immersion the spots and their character on drying in some cases disappear.

The distribution of the two species is by no means ascertained. All book-references to *incarnata* prior to 1914 (and many since) must be ignored. Herbarium specimens are very treacherous, since the essential characters, often owing to bad drying, are with difficulty made out. The results of my own experience show that *incarnata,* although widely spread, is numerically much rarer. As has been said, both species grow in the same soils. More frequently *incarnata* delights in the wettest parts of a marsh, and on the whole both species are best represented in a neutral or sub-alkaline marsh in preference to a peaty soil. *Praetermissa* is abundant in the irrigated meadows of Hampshire and Wiltshire, and in the marshy meadows of Sussex, Surrey, Dorset, Glamorganshire, Carmarthenshire, Norfolk, Berkshire, Oxfordshire, Gloucestershire, and in the few marshes of Northamptonshire, where almost certainly the water is alkaline or loaded with basic salts. *Praetermissa* is abundant, also, in some parts of Anglesey, where the water may in some cases be slightly acidulous: of this we await further particulars. Two years ago, through the kindness of Earl Fortescue, I was enabled to see it growing in many localities in the neighbourhood of Castle Hill and Molland in N. Devon, where in the third week in May it was plentiful, but no hybrids were observed. It was in great luxuriance in wet pastures in the Park of Lady Stucley's at Hartland Abbey, and again as a smaller plant in an upland marsh near Hartland Point. No true *incarnata* was seen. On Saunton and Braunton Burrows it was not unfrequent, and at the former place occurred also as a broad-leaved form. No hybrids were seen on this visit. The Misses Cobbe, who were there in 1917, also said they saw no plant with spotted leaves. At Holsworthy, N. Devon, it was also common in marshes. On wet ground and in acid soils it grew with *maculata,* and hybridised with it near Wareham, Dorset. At Funtingford, W. Sussex, only *praetermissa* grew with some strongly bracteate forms: in the meadows near Fishbourn (Arnold's locality for *incarnata*) only *praetermissa* grew in 1916. The meadows and marshes of the Nene and Whitewater in Northants afford both species. There *praetermissa* hybridises with *Fuchsii,* and other combinations and forms occur. Two visits to South Wales in 1916, resulted in finding *praetermissa* in several spots near Whiteford Point and Llanmadac, Glamorgan, where true *incarnata* also grew. In marshes near Kidwelly and Bury Port, Carmarthen, *praetermissa* was common, and there it crossed with *maculata.* In Oxfordshire, it grows in about twenty different localities, sometimes all pure *praetermissa,* in others crossed with *maculata,* as near Charlbury, or with *Fuchsii,* as at Weston, Finstock (where Mr. Powell showed it me), Hazeley, Headington, etc. *Incarnata* also grows in several of these marshes, and at Cothill and in the Wytham meadows, Berkshire, probably hybridises with *praetermissa.* The latter species is locally abundant near Tubney, Frilford, and Radley. It may be worth while to briefly describe the latter locality. Near Abingdon, at the head of a narrow valley, excavated through the Coralline oolite to the Kimmeridge clay, there is a small marsh, with waters distinctly calcareous. There *Juncus subnodulosus* abounds, with *Carex flava* agg., but no *Drosera.* Among these hundreds of large spikes of *praetermissa* may be observed, varying as to the breadth of the leaves, but uniform in leaf-texture and in the flowers, except that about one in twenty may be picked out at a distance from having lighter coloured flowers. It can be predicted with some certainty that a closer examination will reveal that these will have also leaves more or less strongly spotted, that normally the flowers will have the labellum more cut, and that in many instances they will be taller and stronger plants. These are doubtless hybrids. As another proof that it is a good species may be instanced its occurrence under peculiar conditions in Sussex. The old Chichester Canal from that city westwards is now disused, and its water has partly disappeared, so that there are now long stretches with little open water. A growth of rush, sedge and willow fill up the marshy tract. Evidently any orchid which grows there must have seeded itself from the adjacent meadows or from even greater distances. Along this canal bed

ere are now thousands of *praetermissa* singularly unvarying in
portant points, but greatly different in size (1.5—7.5 dm. high).
praetermissa had been a hybrid, surely in such a case we should
ave seen *incarnata, maculata,* or intermediates there? To fore-
al the critic, we may also say that what has been described as
tifolia by our British authors is not there either. One is being
iven to ask the question—Is there such a species? Or is not the
tifolia of British botanists a dust-bin into which every hybrid of
raetermissa and *maculata* (in the wide sense) has been cast? In
e meadows adjoining the Canal at Mundham and elsewhere
raetermissa also grows, and doubtless it is from this area that the
eds came which germinated in the canal bed. Here, too, in
ese meadows, was *Orchis Fuchsii*, but last year not very com-
only (the term, 'last year,' is expressly used because what may
e true of Orchid frequency one year may be quite different on a
ubsequent occasion).

HYBRIDS OF PRAETERMISSA.

O. PRAETERMISSA × FUCHSII (? *O. maculata superba*, Syme).
Sussex among *praetermissa* and *Fuchsii* were a few (about
ve per cent.) intermediate in character, which were almost cer-
inly hybrids of the two species. At a distance of many yards
e presence of the plant with paler flowers might with some degree
f certainty be predicted to have spotted leaves. These spots differ
om the strongly marked rings and well-defined blotches of normal
uchsii in being paler, less defined, and not rarely as if they were
eneath, not upon, the epidermis. Of course all degrees were found.
ot unfrequently the hybrids were very robust and handsome. One
easured nearly a metre in height, with a correspondingly thick
ollow stem. The flowers had the flat labellum characteristic of
oth parents, the colour much paler than in *praetermissa*, the cen-
al lobe much longer, the markings often more defined and often
iolet or violet-purplish: flowers averaging 14 mm. broad by 8
ng, none less than 12 mm. broad were noticed. The leaves
ere often more spreading than in *praetermissa* (the leaf direction
ems to be greatly due to the more or less thick herbage by which
e plant is surrounded), in some instances they were 18 cm. long,

the leaf-markings paler than *Fuchsii,* and of a duller and bluer green than in *praetermissa.* Doubtless these intermediate forms are the *latifolia* of many botanists, but whether of Linnaeus is conjectural. In similar conditions at Frilford, Cothill, and Abingdon (Berks), Weston, Finstock, Tackley, Spartan, Eynsham (Oxon), Whitewater, Hornstock (Northants, Benacre (Suffolk), Filby (Norfolk), Winton (Hants), [*Lowndes*], near Aberystwith (Cardigan) [*Stephenson*], the same thing occurred. The largest flowers at Frilford and Abingdon were 14 mm. broad by 8 or 9 long, the smallest at Finstock, 11 mm. by 9. At Weston a few of the hybrids had unspotted leaves, but they offered no other distinguishing features.

In answer to some leading questions on the transmission of leaf-spots, Profesor W. Bateman kindly writes ' from what you say there can be little doubt that under the several forms included under the names *O. latifolia,* etc., are a complex group of hybrids and derivatives. . . . As always in such cases, there will be several true-breeding forms to which the term ' species ' may properly be attached, though whether these are originals or derivatives ' extracted ' from crosses can never be decided. Even experimental breeding cannot answer that question, for there is no distinction, physiological or other, between the two classes, and, apart from the incidence of sterility, they are identical. On the specific question as to what would happen in a cross between two types untried, there is only analogy to guide one. But supposing both types pure (which they would almost certainly not be), I feel sure that (1) all the F. hybrids would be blotched or spotted ; (2) I expect the labellum would be intermediate in width. As regards (3) I only know that in wheat *hollow* stem dominates over *solid* stem, but that is too far off to be much of a guide.'

A large plant from Frilford (probably a first cross), a metre high, is probably that mentioned by Boswell Syme (*Eng. Bot.* ix, 101) as *maculata superba.* This grows well in garden loam : it was supposed originally to have been found in a cottage garden at Kilmarnock by Miss Hope of Wardie Lodge, Edinburgh, and Mr. Webster (*Brit. Orchids,* p. 68) says he has found plants in the bogs of Carnarvonshire which, grown side by side, were so alike that he found it impossible to detect a difference. It is quite probable that

ybrids of *praetermissa* × *Fuchsii* and *praetermissa* × *maculata*
ay occur under Boswell Syme's *maculata superba*.

O. PRAETERMISSA × MACULATA, vera. This combination is, I
lieve, present in plants observed at Perranwell (Cornwall), Wool
orset), Odiham (Hants), Charlbury (Oxon), Cothill (Berks),
ornstock (Northants), etc., and usually this occurred in a greater
rcentage than the preceding hybrid. In this case the marking
as more variable and, as a rule, not so well defined (true *maculata*
ually has less defined markings than *Fuchsii*). The measure-
ents varied from 14 mm. broad at Wool to 11 at Odiham. This
brid is often a more handsome plant, owing to the broad flat label-
m with its large side-lobes, than the *Fuchsii* hybrid, and, although
metimes the markings are less evident, the whole flower is often
ffused with a brighter colour than *praetermissa*.

There are other hybrids into which *praetermissa* enters to be
entioned :—

O. PRAETERMISSA × INCARNATA. The flower is of a dull purplish-
nk, paler and smaller than *praetermissa,* the labellum narrower
d less rounded, the central lobe often prolonged : in some plants
e labellum is nearer the shape of *incarnata,* but is larger, darker
loured, and the sides less reflexed. These hybrids are rare, both
regards the number of habitats or individuals : nor are they
be expected in any quantity, since normally the flowers of *incar-*
ta are over before *praetermissa* are ripe enough to give or receive
llen. Yet plants having this origin have been seen in the Thames
adow above Godstow, at Cothill in Berks, and at Hambledon,
Hants. The beautiful painting by the Countess of Aylesford of
latifolia which she obtained from Colne meadows at Denham,
cks, in 1788, suggests that the plant was slightly verging to-
rds *praetermissa,* or rather that *praetermissa* is present to some
all extent, as is evidenced by the somewhat broader and more
eply coloured lip ; otherwise it is *incarnata* which occurs in the
inity. This painting is preserved in the library at Patshull,
ere, owing to the kindness of the owner, the Earl of Dartmouth,
as enabled to submit it to examination.

HABENARIA GYMNADENIA × ORCHIS PRAETERMISSA. The com-
ation *H. Gymnadenia* × *latifolia* = × H. WINTONI (see plate 10)
s suggested (*Rep. Bot. Soc. & E.C.* for 1911, 33) for an Orchid

found on the Winchester Downs by Mr. R. Quirk (*Rep. Winch. Coll. Nat. Hist. Soc.* 102, 1911). This was very close to *Habenaria,* the larger flower and more bracteate inflorescence suggesting the presence of a palmate Orchid. Our members, P. M. Hall and R. B. Ullman (*Rep. Winch. l.c.* p. 8-12, 1912-3), contributed some very valuable notes on the local Orchids, in which several hybrids are mentioned. In this the second parent was suggested to be '*O. incarnata,* n. 2. Druce ' (this was before the publication of *praetermissa*). That view was further strengthened in 1914, when the Rev. S. A. McDowall sent me specimens from the downs of another of these hybrids which, while definitely *Gymnadenia,* also showed traces of *praetermissa.* At that time the presence of true *incarnata* and *praetermissa* on Winton chalk-downs was unknown to me, but there seems no doubt that both species occur. In Buckinghamshire also Mr. Roderick Mackenzie and I saw *praetermissa* growing on a dry chalk bank, an old locality for *militaris,* for which we were in quest. Doubtless, here, as at Winchester, seeds of the marsh orchid had been blown from adjacent meadows and, falling between the grass, had germinated and grown in so very different a habitat. This also explains the presence of true *maculata* in unexpected habitats, and of the woodland *Fuchsii* in open meadows. *H. Gymnadenia* × *O. praetermissa* also grows (teste F. A. Lees) at Bowland, Yorks.

The hybrid, *O. latifolia* × *praetermissa* (see *B.E.C.* 211, 1915), has been recorded from Winchester (*Lowndes*), and *O. Fuchsii* × *latifolia* (l.c.) from Pennypot, Surrey (*Lady Davy*), and Winchester (*Lowndes*).

The other hybrids in the *Winchester Rep.* include (1) *O. latifolia* × *maculata* (these names are used in the Symean sense, before the separation of *Fuchsii,* and doubtless include *O. praetermissa* × *Fuchsii* and *maculata,* vera); (2) *O. incarnata* form 1 Druce with *maculata;* (3) *O. incarnata* f. 2 Druce × *maculata,* which is *O. praetermissa* × *Fuchsii;* (4) *O. incarnata* 2 Druce × *ericetorum,* which is *praetermissa* × *maculata,* vera.

HABENARIA VIRIDIS × O. MACULATA × PRAETERMISSA (see *B.E.C.* 24, 1914, and *B.E.C.* 342, 1913). This was first described by Mr. Hall as *Habenaria viridis* × *O. maculata.* In 1913, fresh specimens were found growing with Frog and ' with a form of *incarnata* ' [*praeter-*

a] and we independently came to the opinion that it was a
ary hybrid, thus :—

ncarnata (*praetermissa*) { × *Habenaria* (Coeloglossum) *viridis.*
naculata (or *Fuchsii*) } (See plate 11).

mong the variations noticed are two which are rather monstrous
litions than true varieties, *e.g.*, ' lusus ECALCARATA with a spur-
flower and concave lip, seen near Pudmore, Surrey, by Mr.
. E. Boys, June 20th, 1914, and ' lusus REVERSA ' with the
nen not twisted, so that the labellum is uppermost, Charlbury,
a (in which some of the flowers are normal), and sub-var.
FLORA with flowers pure white, a solitary specimen seen near
.gdon, Berks. The width of the leaves and the length of the
ts vary so greatly and so gradually that these characters are
ss for varietal segregation.

ne question, not unfairly, may be asked :—' Are spots on the
es of specific value? ' The answer is no, if that is the only
rence, since each normally maculate species has occasionally
olorous leaves, but if amid the unspotted *praetermissa* one found
es having intermediate flower characters, and the spotted form
aculata only were present, the occurence of a small proportion
ng both the flower and the leaf characters intermediate would
fy the suspicion that these were of hybrid origin. Soil does
appear to account for great variation in *praetermissa,* but a
complete drainage, such as I have noticed in cultivation, seems
ighten the colour and to accentuate the labellum-lobing, and
the size of the central lobe. Mr. W. C. Barton, after seeing
ermissa and its allies in some quantity in Suffolk and else-
e has no doubt of its specific grade, and that is the opinion of
a close observer in field as the Rev. E. S. Marshall. The
S. McDowall, who has had exceptional opportunities of study-
he plant, and having had also under his examination the field-
of those two promising Wintonians, Lieuts. P. M. Hall and
an, who independently came to the conclusion as to its specific
e, himself states that *praetermissa* is a constant and definite
es at any rate in this (Winchester) district, ' though it is very
to hybridise with the other marsh forms.'

e examination of thousands of specimens from very varied
es convince me that *praetermissa* is a good species, and that

it hybridises, not only with *incarnata,* but with both segregates of *maculata.* That these hybrids again cross is pretty evident, and when, as in Dorsetshire, all three species grow together, a much greater variation is to be found. Under *praetermissa* allusion was made to plants with darker coloured leaves, which may be the hybrid recrossed with *praetermissa.*

The following is the distribution of the species so far as known to the writer. He has either gathered it in these places or has seen fresh specimens :—

Praetermissa has been seen from Cornwall—The Lizard (F. J. Smith) Par, Millook, Perranporth (Harvey). Devon, S.—Ivy Bridge (Hon. Mrs. Mildmay). Devon, N.—Braunton, Saunton, Hartland, Castle Hill, Mollond, Holsworthy. Somerset, N.—Weston in Gordano (Mrs. Sandwith). Wilts. S.—Wilsford. Wilts, N.—Chilton Foliat (Miss Todd). Dorset—Toller (F. J. Smith), Wool, Moreton, Wareham (Druce), Stoborough (Roper), Slepe Heath, Studland (Green, etc.). Hants, S.—Milford (Melvill), Hambleden (Miss Butler), Winton, in meadows and on downs (McDowall, Hall, Lowndes, etc). Hants, N.—Basingstoke (Miss Vachell), Easton (Comber), Odiham (C. E. Palmer). Sussex W.—Fishbourn (Burdon), Petsworth (Lacaita), Mundham Funtington, Bed of Chichester Canal. Sussex, E.—Near Lewes. Kent—Lullingstone (Hume). Surrey—Ockham (Britton), Chobham (Lady Davy), Pudmore (Watkins), Frensham (Shaw), Pennypot. Essex, S.—Lea meadows. Essex, N. Gt. Henny (Druce and Brown). Herts—Wilstone, Marsworth. Middlesex—Nr. Uxbridge. Berks —Tubney, Abingdon, Frilford, Newbury, Wytham. Oxon.—Tackley, Eynsham, Weston, Sonning meadows. Bucks.—Longwick, Wilstone, Denham, Fawley (on chalk), Hambleden. Suffolk, E.—Benacre (Druce, 1910). Suffolk, W.—Nr. Sudbury. Northants.—Whitewater, Hornstock, Wadenhoe, Bedford Purlieus. Gloster, E.—Cirencester (Greenwood), Marston Meysey. Monmouth—Nr. Tintern (Lamb). Stafford—Nr. Patshull (Lady Joan Legge). Salop—Longmer (Burton). Glamorgan—Taeygarn, Cowbridge (Vachell), Whiteford Point, Llanmadoc. Carmarthen—Kidwelly, Burry Port. Cheshire—Wybunbury. Carnarvon—Traeth Mawr. Anglesey—Bodorgan, Cors Bodeilio. Leicester—Botcheston (Horwood). Rutland — Luffenham (Horwood).

erby—Ashwell (Bailey). York—Bowland (Lees), Scalby (Roe). urham—Copsgrove, Teesdale. Lake Lancashire—Kirkby (Pear-ıll, 69b). Wigton—Portpatrick (Bailey), Selkirk. Seetholme—/hitemoor (Hayward). Berwick—Gordon Moss. Forfar—Res-bie. Aberdeen—Nr. Aberdeen. Hebrides—Canna (Vachell). rkney—Sanday (St. Quintin). Localities without personal auth-ity are my own finding.

A glance at the history of the Palmate Orchids may now be iven.

It is said that when Dillenius received Linnaeus at Oxford, he id, in an aside to Dr. Shaw, ‘This is the young man who is bring-g confusion into Botany.’ Had he limited his remarks to the Orchi-iceae, he would not have been unjustified. Linnaeus altered many imes, he rearranged and muddled many of Tournefort's genera, r his knowledge of this group was not up to his normal level. e united the solid-rooted *Serapias* with the creeping *Helleborines*, id called them all by the former name, which Hill had the acumen eedily to correct. His species in some cases contained plants of vo or more genera. He described *O. latifolia* and *O. incarnata*, the *Species Plantarum*, basing his description on that of *Flora uecica*, i.e., *O. incarnata* = ‘O. bulbis palmatis, nectarii cornu onico, labio obscure trilobo serrato, petalis dorsalibus reflexis. ab. in pratis rarius. Praecedenti [*O. latifolia*] simillima, a qua ffert : foliis pallide viridibus, immaculatis : nec saturate viridibus aculatis : caule dimidio breviore : bracteis vix flore out germine ngioribus : corollis pallide incarnatis nec rubris : petalis 2 dor-libus totaliter reflexis : nec tantum patulis, nec maculatis ; nec-rii labium structura convenit.’ There can be no doubt that our ile flesh-coloured Orchis described by Clarke, and in the fore-ing pages is covered by the Linnean description. Leaving the estion of *O. latifolia* L. for the time, we shall see that Hudson *l. Anglica*, 335, 1762) omits all reference to *incarnata*, and des-ibes the Male-handed Orchis as *O. latifolia*, taking the name and scription from the *Sp. Pl.* and *Fl. Suec.* He cites Bauhin's . palmata pratensis latifolia, longis calcaribus, and Gerard's ılma Christi mas 220 (this figure is copied from Lobel's wood-cut), hich represents our *O. incarnata*. In the second edition (385, 78) he alters the English name to the Broad-leaved Orchid, omits the reference to *Fl. Suec.* but adds a ref. to Oeder *Fl. Danica,* t. 246, which also is a form of *O. incarnata.* Hudson's *latifolia* doubtless included both *praetermissa* and *incarnata,* as well as *latifolia,* whatever that may be. Withering (*Bot. Arr.* 544, 1776), while quoting Gerard's figure, adds a description which says 'leaves, especially the lower ones, a little spotted': his '*latifolia*' is evidently a mixture. Stokes (*Bot. Arr.* ed. 2, 875, 1787), as is his custom, quotes descriptions from different British botanists: he also cites the figure in Blackwell's *Herbal,* t. 405, which is a badly-coloured *praetermissa.* Woodward's description also includes the spotted-leafed plant, but he evidently had *praetermissa* also before him, and it was probably that species which Stokes saw between Battenhall and Worcester. Next in order comes Curtis (*Fl. Lond.* fasc. v, t. 65), who beautifully figures as *O. latifolia* what C. B. Clarke (*Journ. Linn. Soc.* xix.) says is the true *incarnata.* Curtis says 'it grows in Battersea meadows, pink being the most predominant colour . . . frequently purple, and sometimes white.' To me there seems in it slight traces of *praetermissa*, or it may be a slight variant in that direction. The drawing of the flower is excellent, showing the small labellum, just as the flower expands: Curtis adds 'reflexed with age'; in perfectly true *incarnata* this happens very soon, and this causes the flower when viewed from the front to look smaller than it is. The shape and direction of the leaves are well depicted, and Curtis adds 'colour yellowish-green . . . spotless with us.' Smith (*Flora Britannica,* iii. 924), as usual, gives a large number of synonyms for his *O. latifolia;* he cites Curtis (*incarnata*) and Haller Hist. ii., 1279, t. 32 (which is a different *Orchis*). His descriptions (contradicting Linnaeus), 'labium rotundatum apice trifidum lobis magnitudine et forma variis,' and 'folia . . . omnia apud nos immaculata,' suggest that *praetermissa* and perhaps *incarnata* were also before him. In his *English Flora* (iv. 21, 1828), *latifolia* is made even more a mixture, since there are several additional synonyms. He, however, says 'unspotted leaves erect, gradually smaller upward, the lip variously notched, generally somewhat three-lobed, the colour varying from a pale-flesh colour or white to a full rose or crimson.' He goes on to say, 'authors have made several species out of this one,' but he himself certainly combines several distinct species. The specimen figured in *Eng. Bot.* 2308, 1811, as *O. latifolia* is probably a form of *incarnata* badly coloured. Babington appears to have been the first English botanist to introduce the name *incarnata* into our list (*Man.* 310, 1847), where he makes it a variety of *latifolia*, under which he places also var. *angustifolia* as synonymous with *Traunsteineri*. His description of *latifolia*, 'leaves spreading oblong obtuse, upper lanceolate acute, lower bracts longer than flowers,' conveys very little, but his italicised words, 'sides of lip reflexed,' seems to eliminate *praetermissa*. In *E. B. Suppl.* n. 2973, 1863, he however describes and Salmon figures a plant from Triplow, Cambridge, gathered in 1856, which he calls *latifolia*. He says in MS. note, 'flower should be bright cochineal rather blue, like the bracts above.' This figure also does duty for *latifolia* in *E.B.* t. 1458, where Syme's description does not agree in all points with the figure. The statement that the flowers are rather smaller, darker and redder than *incarnata* is incorrect; the labellum in his *incarnata* measures 7 mm. broad by 10 long; in his *latifolia* it is 14 mm. broad by 15 long. Pending a visit to the locality, I should consider the plate, *E.B.* 1458, to represent a hybrid of *praetermissa*. In later years Babington specifically separates *incarnata* from *latifolia* in his *Manual*, where he still cites the *E.B. Suppl.* plate to represent the latter species. The plate (*Reichb.* 397) cited by him for his *incarnata* does not represent the typical British plant, the labellum being too broad and three-lobed. The definitions in Hooker's *Student's Flora*, where they are treated as sub-species, i.e., *latifolia* 'lip spotted, leaves oblong, tip flat'; *incarnata* 'flowers larger, leaves lanceolate, acute unspotted, tip concave, base broader,' has misled many botanists, and is practically useless. Webster, whose work on the British *Orchids* has been strangely neglected, has a much clearer idea of the plants in question. He says (l.c. p. 71), '*O. incarnata* can, however, never be mistaken for *maculata*, as no two native species are more dissimilar either in size, habit, general appearance, or colour of flowers. The leaves are never spotted . . . but of a bright, pleasant green, always erect, and clasping the stem . . . the flowers are of a flesh or port-wine colour.' He goes on to suggest that his *latifolia** (which is doubtless *praetermissa*) can be

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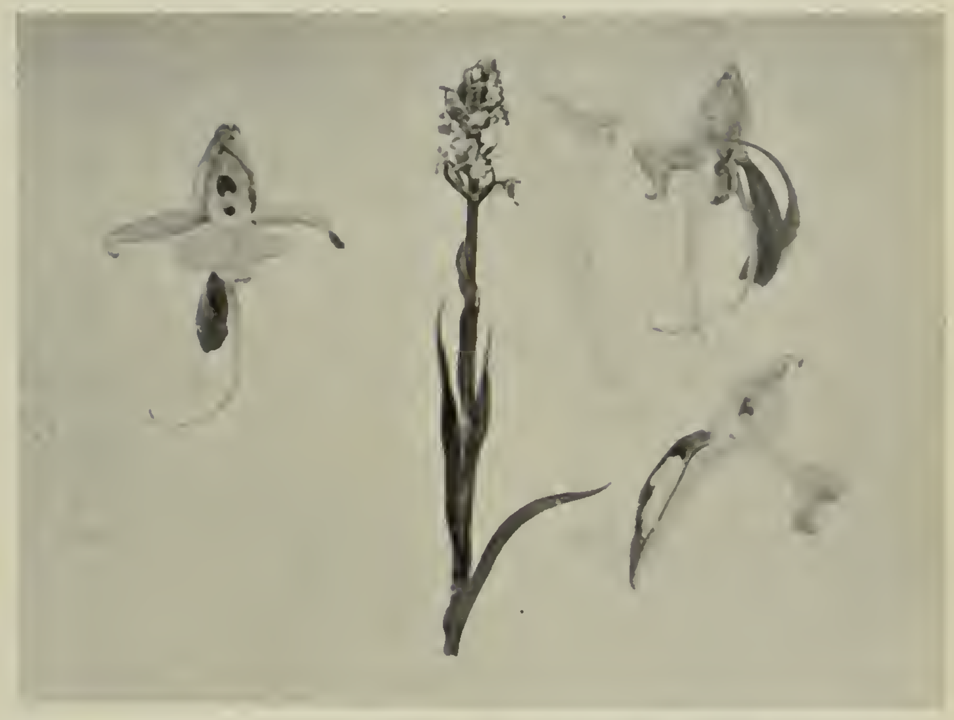
* The figure he gives of *latifolia* is taken from *E.B.* 2308.

'only applied to the plant with unspotted leaves and deep purple, port-wine coloured flowers, and that all specimens with spotted leaves and variously coloured (usually lighter) flowers be regarded as mere hybrid forms between this plant and *maculata*.' This, altering the name *latifolia* to *praetermissa*, is practically my own conclusion. He speaks of his *latifolia* having uniform, that is, unmarked, flowers, and 'that it is in truth *the* Marsh Orchis, for it always affects the dampest ground in company with iris, rushes, sphagnum and other semi-aquatic herbage.' He speaks of the intermediates. (1) 'That in which the habit remains unchanged, but the leaves faintly spotted and the flowers are of a less desirable hue.' This is probably *O. praetermissa* × *maculata* agg. (2) *O. maculata superba*, already alluded to. (3) 'Larger than the last with the leaves spotted or blotched and only sub-erect, but far more so than in *maculata* [Fuchsii] and, like that species, with a pyramidal head of purplish flowers rather loosely placed on the stem [possibly *O. Fuchsii* × *praetermissa*]. He says, 'All these forms occur sparingly with *latifolia* (*praetermissa*) in wet, marshy ground . . . rarely at a great elevation. In some of the Carnarvonshire and Anglesey bogs and swamps I have frequently met this plant, sometimes in quantity, so that ample opportunities have been offered for studying them under different circumstances as regards soil and situation.' He goes on to speak of the difficulty in growing his *latifolia* (*praetermissa*) if even a portion of the rootlet is broken; it is, he says, 'a lovely plant, with a peculiar fresh-green tint of foliage that is wanting in any other species. The flower is also beautiful in the extreme. . . . There is a white-flowered variety . . . which Mr. J. E. Griffith sent from marshes in Anglesey. They were like the type,' but 'the flowers were of an unspotted white . . . instead of the usual deep purplish-pink.' In the Anglesey marshes, such as Cors Bodeilio, *praetermissa* and its hybrids still occur.

When Mr. Webster speaks of *O. maculata*, he evidently means *O. Fuchsii*, as his figure, taken from *E.B.*, 2973, shows. His *O. maculata praecox* is the true *O. maculata* L., and it is owing to his acumen that the difference between it and the other form was first pointed out. Some held that *praecox* differs from *ericetorum* (Linton), since Webster speaks of it as flowering in April and May,

PLATE 10.



HABENARIA GYMNADENIA × ORCHIS PRAETERMISSA × = H. WINTONI DRUCE.

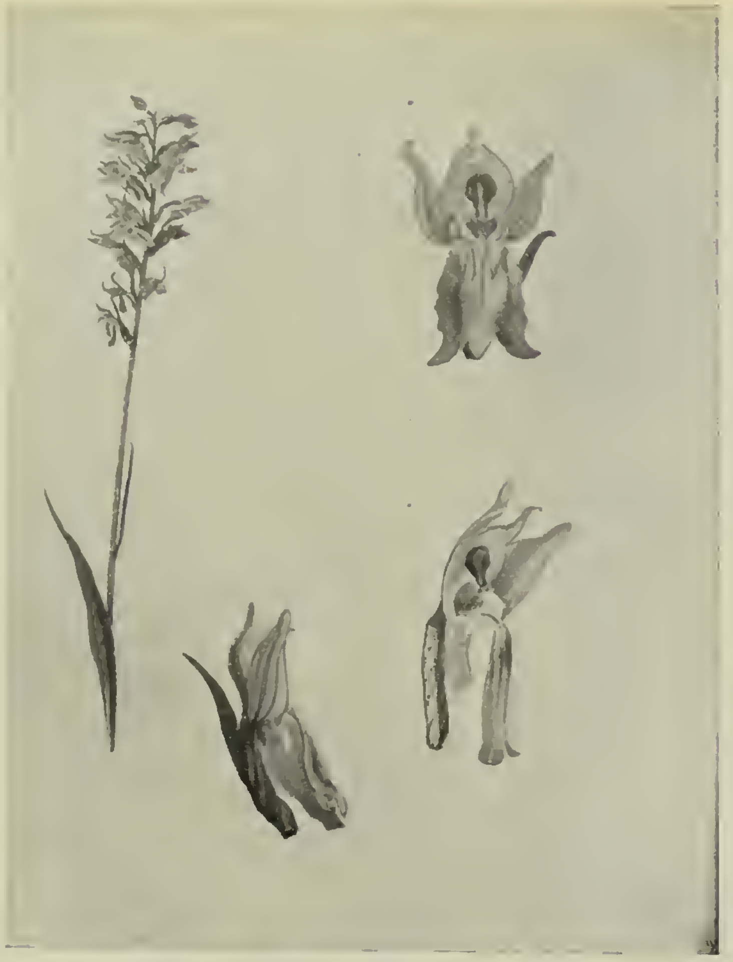
(H. conopsea × praetermissa).

From water-colour drawing by Miss B. Corfe. Photo, R. H. K. Peto.

(Lent by the President, Winchester Coll. Nat. Hist. Soc.).

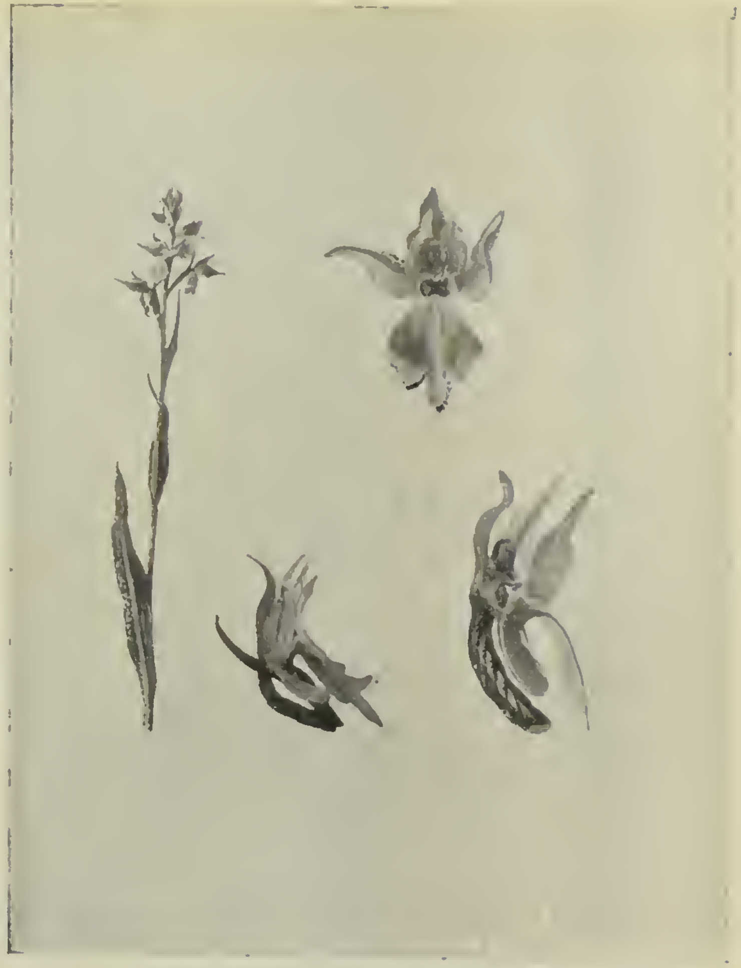
PLATE II.

FIG. B.



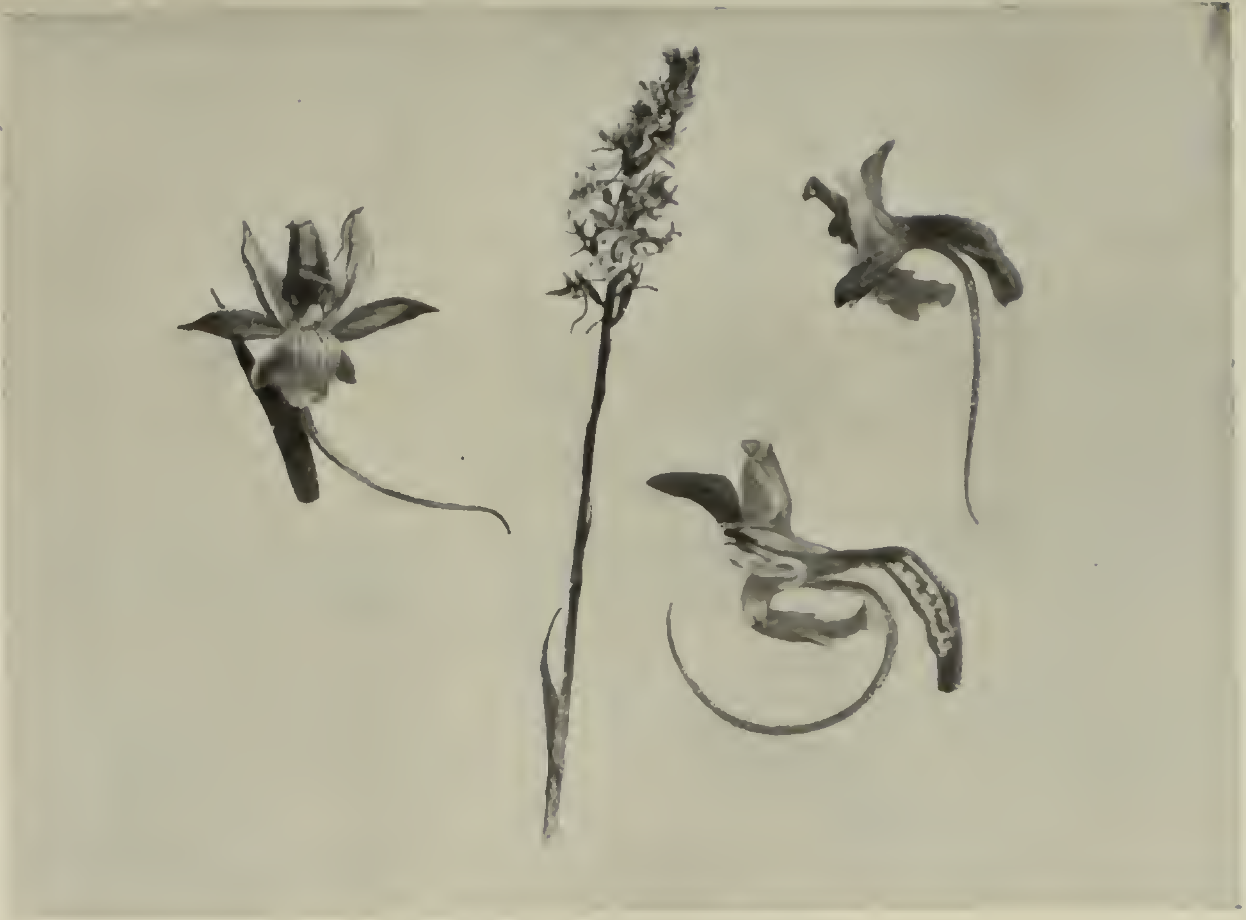
HABENARIA VIRIDIS × ORCHIS INCARNATA × MACULATA.
From water-colour drawing by Miss B. Corfe.

FIG. A.



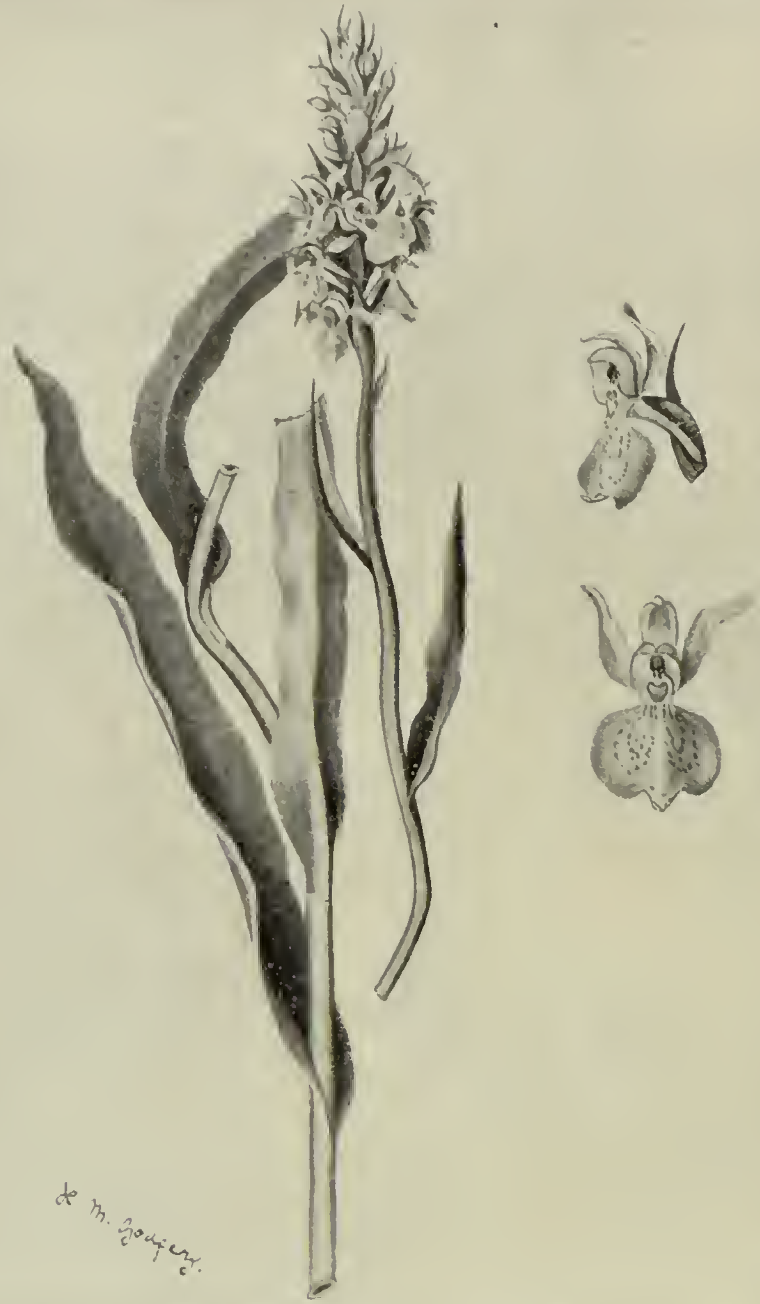
HABENARIA VIRIDIS × ORCHIS MAC. ? INCARN.
Water-colour drawing by Miss B. Corfe.

PLATE 12.



HABENARIA GYMNADENIA × VIRIDIS.
(Gymplatanthera Jacksonii).
From water-colour drawing by Miss M. Corfe. Photo, W. Abley.
(Lent by the President, Winchester Coll. Nat. Hist. Soc.).

PLATE 13.



ORCHIS PRAETERMISSA × FUCHSII.

From water-colour drawing by Mrs. H. M. Godfery. Photo, W. Abley.

(Lent by the President, Winchester Coll. Nat. Hist. Soc.).

but Mr. J. Griffith, the well-known author of the *Flora of Anglesey and Carnarvonshire*, says (in lit.) Webster's plant is *ericetorum*, that it flowers from May onwards, and 'I have seen it growing in such habitats as that mentioned by Webster.' True *maculata* of the peaty areas flowers earlier than *Fuchsii*, as Mr. Linton himself mentions: therefore we may assume that *praecox* and *ericetorum* are identical, and that the description in the *Species Plantarum* well covers both.

2327. ORCHIS MACULATA. In the *Rep. B.E.C.* 99, for 1914, descriptions are given of the three species formerly merged in the above name. For convenience, their main features are here repeated.

O. MACULATA, L. vera [*O. ericetorum* (Linton), *O. maculata* var. *praecox* (Webster)]. Plant usually rather slender, leaves usually spotted, usually narrower than in *Fuchsii*, inflorescence often conical and normally shorter than *Fuchsii*, corolla of different shades of lilac or purple, or sometimes pure white with faint markings, labellum trilobed, the lateral segments larger and usually longer than the middle one, and, owing to the broad labellum, the flowers are more contiguous, but the bracts less conspicuous. Heathy situations, or damp places on acid soils over primitive rocks.

O. FUCHSII, Druce, (*O. maculata* Sm. *E.B.* t. 632, not the details) and Kränzlin and Müller (*Orchid Art.*, t. 29, 1904). Usually a stiffer and often a taller plant than preceding, with broader and more fleshy leaves, which are more strongly marked with black-purple rings or blotches; inflorescence usually cylindric, but at first conical, bracts often exceeding flowers, corolla lilac (rarely purple) with much darker and usually more definite markings than *maculata*: labellum trilobed, the middle segment as large and longer than the lateral. Woodlands and pastures, usually on basic soils. Mr. Burton has grown both species, and finds they keep their character for many years even in different soil.

O. O'KELLYI, Druce, l.c. Rather slender, leaves usually narrow, pale clear green, unspotted; flowers smaller than preceding, pure white or with a roseate tinge on the stigma and (as Mr Burton points out) on the pollinia cells, the pollen mass of a dark shade of green; labellum of three small sub-equal divisions, the middle one the longest. Calcareous areas of the Burren, Co. Clare, Galway, Sutherland, Yorks, etc. The more slender growth and smaller flowers with sub-equal divisions distinguish it from white-flowered *Fuchsii*, i.e., var. *triloba* Bréb., to which it is closely allied. The first two species vary immensely, and either hybridise or possibly merge into each other, especially on certain soils, such as pastures on basic soils on which there is humus, or on cliffs and downs of calcareous strata in pockets of leaf-mould. *O. maculata* itself sometimes occurs on basic soils; considering the smallness and infinity of the seeds, this might be expected. So, too, *O. Fuchsii* may occasionally seed itself on acid soils. The intermediate plants, with a stronger growth and firmer leaves, and longer inflorescence, I have named (*Rep.* 213, 1915) *O. maculata* × *Fuchsii* = *O. transiens,* Langham Moor (Essex), *G. Brown*, Aberystwyth, *T. Stephenson*, Wareham (Dorset), Tackley (Oxon), S. Devon, Miss Larter.

O. MACULATA, sub-var. LEUCANTHA. Beautiful specimens sent from Longmer by Mr. R. F. Burton in 1916, which have been grown in a pot since 1911 from tubers collected in an adjacent field. The colour of the flowers is pure white, with strong parallel veins, which in drying turn brown, giving a curious striate appearance; after four years' growth in the changed soil a few pinks spots could be detected through a X 10 lens. Originally a weak dwarf plant, but grown in sifted bog earth it has developed into a plant 22 inches high with a spike 4 to 5 in. long. Also at Tregaron (Cardigan) *Stephenson*, Ballyvaghan (Co. Clare, *O'Kelly*, Tackley (Oxon), Wool (Dorset).

O. MACULATA × PRAETERMISSA = × O. HALLI, Druce, has already been mentioned. Otterbourne (Hants).

O. MACULATA × INCARNATA.

O. MACULATA × LATIFOLIA = O. BRAUNII, Hal. See *Rep.* 219, 1915.

O. MACULATA × HABENARIA GYMNADENIA. Tregaron (Cardigan), *Stephenson*, 1915, Birkenhead (Cheshire), *E. F. Payne*, v. sp.

O. MACULATA and O. FOLIOSA = O. SCAMPSTONENSIS. A fine specimen occurred at Scampston Hall, where Mr. St. Quintin had a bed of *foliosa*, originally brought from Madeira, and *O. maculata* grew near. This plant has the robust growth and large flowers of *foliosa*, but the stem is solid and the leaves spotted. The labellum measures 16 mm. by 10 mm., is three lobed, the two lateral large and rounded; they are beautifully marked with violet lines. It may be well here to refer to × *O. Hepburnii,* a hybrid of *foliosa,* and the showy *maculata superba,* which originated in a similar manner in the garden of Sir A. Buchan Hepburn (see *Rep.* 211 for 1915). These hybrids prove an important point, namely, that in the hybrid of a plant with clear green leaves like *foliosa* the purplish-black markings of the other parent appear as rings or blotches in the offspring. Some striking forms of *O. maculata* have been sent by the Rev. T. Stephenson and his son from Cardiganshire. One of these, *Rep.* No. X. 77, has long narrow leaves, often unspotted, and a curious pink tint of flower. It grows in a bog to the exclusion of other forms. In a bog near Corfe Castle, Dorset, a similar long-leaved plant occurs, the flowers are small, purplish, and with sharply defined markings .

O. FUCHSII, Druce, has many modifications. Var. *trilobata,* Breb., has a slender spike of small flowers, the lip-divisions nearly equal› and is very close to O'KELLYI, but it has spotted leaves and tinted flowers. Oxon, Hailey; Leicester, Saltby Heath (*Horwood*); Hants, N., Wassail Copse, Odiham (*Palmer,* 1883); Lake Lancashire; Dalton-in-Furness (*Pearsall*; M. Perth, Kenmore.

Sub-var. ALBIFLORA, spikes 4—5 in. long, lower bracts green exceeding the flowers, labellum pure white, deeply trifid, the middle lobe as long as lateral, strongly veined. Dorset, Wool, Moreton.

O. FUCHSII × HABENARIA GYMNADENIA with both parents. Fermoy (Ireland) *T. H. Leach.*

2326, ORCHIS INCARNATA, L. The description of this has already been given, and some of its hybrids referred to; but it has other modifications. One of these is a small beautiful plant which is found on sand-dunes, sometimes (as on the Sands of Barry) in enormous quantities, and in a large series of bright colours from pure white, various shades of rose, red and crimson to darkest purple. This I described in *Rep.* 212, 1915, as var. *dunensis.*

There is another beautiful form which grows in sphagnum and peat bogs in the New Forest, Teesdale, Wales and Scotland, and is what I have been calling northern *incarnata.* For this I propose the name—

ORCHIS INCARNATA, L. var. *pulchella mihi.* This differs from the type by the flower being of a rich purple colour, the labellum 7 to 8 mm. broad by 8 long, broadly oval in outline but with rough crenations on the sides, not trifid nor trilobed, strongly marked with darker interrupted lines. The labellum is less reflexed and less brittle than the type, and the plant rather more slender. This grew in a wet boggy place south of Lyndhurst, S. Hants, and is somewhat similar to plants sent me in 1911 by Mr. Philipson-Stow from the same neighbourhood, but his plants had a broader labellum (9 by 8 mm.) and they were coarsely lobed at base. The various hybrids into which *incarnata* enter have been mentioned.

Under this comes a very beautiful hybrid *O. incarnata* var. *pulchella* × *maculata* agg. (probably *Fuchsii*) which Mr. W. H. Quintin found near the Yorkshire coast.

2325. ORCHIS LATIFOLIA L. The Linnean description (*Sp. Pl.* 1334, 1763) is ' O. bulbis subpalmatis rectis, nectarii cornu conico : labio trilobo lateribus reflexo, bracteis longioribus,' *Act. Upsal.* 1740, p. 15, *Fl. Suec.* 728, 801, *It. Oel.* 48, *Dalib. Paris,* 274. O. radicibus palmatis, bracteis flore longioribus, nectarii labio trifido, cornu germinibus breviore, *Hort. Cliff.* 429, and O. palmata pratensis latiolia longis calcaribus, *Bauh. Pin.* 85, *Vaill. Paris*, t. 31, f. 1-5. He adds three other plants from Caspar Bauhin, gives as its habitat ' in Europae pratis,' and adds ' Petala 2 lateralia sursum flexa, tria vero conniventia, Nectarii labium lateribus reflexum, Caulis fistulosus.' It will be observed that no reference is made to the spotted leaves. In *Flora Suecica* (ed. 2, 801) Linnaeus says it grows ' in pratis montosis humidioribus, minus frequens in plerisque regionibus (*incarnata* " in Pratis rarius "). Radices rectae, nec multum divaricatae, inque duos vel tres digitos divisae. Folia parum maculata, praesertim inferiora. Petala 2 dorsalia patentia margine posticae reflexo. Nectarii labium retrorsum complicatum, serratum, obscure trilobum.'

There is little in these descriptions to exclude the suggested hybrids in the foregoing pages, but they may refer to a distinct species.

Fries, perhaps better than any botanist, knew the plants of Linnaeus, therefore we quote from the *Flora Scanica,* p. 164, ' *O. incarnata* L. foliis acutis erectis, petalis lateralibus reflexis immaculatis. In paludosis inter *Juncos*, etc., frequenter. Descriptio Linn. manifestissima. Caulis . . . firmus *cavus*, foliis plerumque linearibus canaliculatis, fere equitantibus, laete at pallide viridibus, absque macularum vestigio, dense obtectus et vulgo superatus. Petala dorsalia reflexa immaculata. *O. angustifolia* Lois.' This, so far as it goes, excellently describes our *incarnata*. His *O. latifolia* ' foliis acutis patulis, petalis lateralibus adscendentibus maculatis. In pratis et campis depressis, priori rariora. Folia obscuriora saepe maculata in caule altiori fistuloso sparsa, prioris vulgo latiora. Priori serius floret.' Smith's *English Flora*, as we have seen, materially alters Linnaeus' description, and says ' leaves unspotted.' He cites three figures,—Curtis, t. 65, which is *incarnata;* Fl. Danica, t. 266, also *incarnata;* Gerard's 220 and 222, *Serapias palustris latifolia* and Haller's *Hist. Helv.* ii, 142, t. 32, f. 2. This represents fairly well many of the plants called *praetermissa* × *maculata*, except that the sides of the labellum are more reflexed, which doubtless influenced Babington's description.

By the kindness of Herr Keller of Aarau this summer some fresh specimens of the Swiss *O. latifolia* were sent me; unfortunately the misdirected energies of censorship delayed their delivery until the flowers were destroyed, yet the general appearance differed from that of any English plants known to me. It may well be that there is a distinct species *O. latifolia* (cf. Kranzl and Muller's *Orchid. Art.*), and that what have here been suggested to be hybrids come under it. For the last three years I have visited many localities from which *latifolia* is recorded; so far I have not been able to satisfy myself that we have a third species of the Marsh Orchid.

It is evident that much further field-work will have to be done before it is safe to reject *latifolia* as a British plant. Indeed such trustworthy observers as Colonel Godfery, whose experience of continental forms is very great, tells me that Reichenbach's figure of *latifolia* is not good; that he has found *latifolia* with spotted and unspotted leaves in the water meadows near Winchester. He considers it is a species, since it is too constant for a hybrid, and he has seen hundreds of *latifolia* growing together, as like as two peas: that he has found in plenty where *praetermissa* does not occur, and also he believed where *maculata* was absent; and that the hybrids of *praetermissa* and *maculata*, of which he has found three different kinds, did not suggest *latifolia* to him; and that on the continent he has seen *latifolia* abundant in the lower part of the St. Martin Vesubii valley more so than *maculata* auct., and he believed *praetermissa* was absent. Dr. Heslop-Harrison, who has been studying the Durham Orchids, also says that ' *O. latifolia* occurs near Bully quite away from the other forms. It occurs in profusion where *O. maculata* and *O. incarnata* are unheard of. Similarly I know localities in S. Durham where *O. incarnata* is without it, but with *O. maculata*. *O. praetermissa* is most frequent on the coast with *O. maculata,* but (as with us) precedes it in flower. The following is the order of flowering: *O. praetermissa, O. incarnata, O. latifolia, O. maculata,* but note, the conditions vary tremendously.' (With us in the South *O. incarnata* usually precedes *praetermissa*). The crucial test will be to cross *praetermissa* with its allies, but the time required to prove the offpring is so long that I am not likely to see the results. It is quite certain that *O. latifolia,* as described by Babington and other British botanists, does not apply to a single entity: contrast the figures he cites of *E. B. Suppl.* 2973, and *Reichb. Ic.* 402, which are wide as the poles asunder. It was this divergence of opinion respecting *latifolia* which caused Watson (*Top. Bot.*) to use the name *majalis* Reichb., but even under that heading the species in his herbarium are far from homogenous, and the two figures of *majalis* (Reichb. *Icones Critica*, n. 515, have narrow spotted leaves, the apices not flat, the lip deeply trilobed, the upper bracts not very long nor leafy (his description says leaves 'ovali-lanceolatis, patentibus,' while his fig. l. c. 564, is a quite different plant, nor are either like his *latifolia* in the *Ic. Fl. Germ.*, xii., t. 402). Mr. Bedford has sent me some beautiful photographs of 'O. latifolia' in situ from Sussex. Mr. St. Quintin agrees with me in the belief that these are *maculata* hybrids.

Lengthy as this note is it can only be looked upon as a contribution towards unravelling the tangle in which the palmate Orchids are enmeshed.

2338. HABENARIA GYMNADENIA, Druce, *Gymnadenia conopsea,* Br. Under the latter name Dr. Heslop Harrison (*Vasculum,* 9, 1917) records 'var. DENSIFLORA (Dietrich) with broad leaves and thick flowering spike, flowers a little darker than type.' Billingham, Durham.

Var. nova SPIRALIS, spike pyramidal, fairly dense; flowers fragile looking, lilac: upper sepal revolute; lateral or wing sepals, spirally twisted; lip narrow, more definitely cleft than type, bent backward instead of forward; leaves narrow and lanceolate, edges not subparallel. Billingham, Durham.

Var. nova BICOLOR, put provisionally under *conopsea*, but thought to be a var. of *odoratissima*. The flowers purplish, except the lip, which is pure white, hence the name; leaves narrower, but bracts less lanceolate than type.

The floral characters of these forms are shown in this table:

Form.	*Breadth of flower.*	*Height of flower.*	*Breadth of lip.*	*Height of lip.*	*Length of spur.*	*Length of ovary.*
conopsea	14 mm.	11.5 mm.	8.5 mm.	5 mm.	15 mm.	10 mm.
spiralis	15 mm.	11 mm.	7.5 mm.	5 mm.	12 mm.	8 mm.
bicolor	11 mm.	7 mm.	3 mm.	2 mm.	3.5 mm.	8 mm."

Rouy (*Fl. France*, xiii, 100, 1912) describes *Htbenaria odoratissima* as *Gymnadenia odoratissima* Rich. as follows: Stem, from 2-4 dcm. (*H. Gym.* 3-6) subangular above (*Gym.* cylindric); leaves glaucescent, upright or arched, carinate linear, much narrower than in *H. Gym.;* flowers small, 5-8 mm. long (*H. Gym.* 8-10 long), clear lilac (Reichenbach says kermespurple) (in *H. Gym*-violet or carmine), with a powerful vanilla-like scent (in *H. Gym.* scent of orange flowers), in a slender, dense, rather short spike (*H. Gym.* in a more or less compact cylind. spike); labellum 3-lobed, longer than broad, the median lobe broad and prominent (in *H. Gym.* broader than long, the median lobe narrow only slightly longer than lateral); spur short, thickened, scarcely as long as ovary (in *H. Gym.* slender, subulate curved about twice as long as ovary). This is found in moist calcareous fields and hilly places in the west and north-west of France and about Paris.

This was recorded from Durham by Dr. Heslop Harrison (*Rep.* 429, 1916). It was first mentioned as British by Mr. W. Pamplin in the *Mag. of Nat. Hist.*, xx, 475, 1836, growing between Juniper Hill and Box Hill, Surrey, June 28, 1833, but Watson lost the record, and the plant has not been included in our floras. Through the kindness of Dr. Heslop Harrison I saw the Billingham specimen of his *bicolor,* which has a white labellum deeply trilobed and broader than long; the spur is short, not more than half the length of the ovary; the carinate leaves, however, are not very narrow, the lower being 14 mm. broad. Against Dr. Harrison's suggestion that it is a form of *odoratissima* are the broader leaves and rather large flowers.

2338. HABENARIA GYMNADENIA Druce, var. BOREALIS, nov. var. Plant about 1.5 dm. high; leaves about 5 mm. broad, the spurs thick about as long as ovary; flowers very sweet-scented, dark purple, 3 mm. long by 2½ broad, the middle lobe relatively larger than lateral. Upland pastures near Watendlath, Cumberland, 1907. Formerly I thought it might belong to the var. *alpina* of Reichenbach. See *Ic. Fl. Helv.* t. 425, but these Borrowdale specimens have a shorter spur, and approach *odoratissima.*

In order to bring the scattered notes on Orchids together, through the kindness of the President of the Winchester College Natural History Society (the Rev. S. A. McDowall), the following papers which appeared in the Reports of that Society, 1912—1917, are here reprinted nearly in *extenso* :—

‘ NEW HYBRID ORCHIS, Habenaria viridis (Frog Orchis × O. latifolia ?Marsh Orchid). This remarkable new hybrid (of which a close description is given) is a valuable find and an interesting sequel to Mr. Jackson’s discovery of the cross between the Fragrant and the Frog Orchid. The Frog is again our parent but its influence is more marked : while the earlier cross may be said to be three parts Fragrant to one part Frog, the new one is in a fully intermediate stage and stands midway between the Frog and the other parent. What the latter is has not yet been determined,—probably *O. latifolia,* a somewhat stunted form of which occurs sparingly on the Downs, but *O. incarnata* and *maculata* have also claims to be considered. Taking *O. latifolia* to be the second parent, the following are some of the main respects in which the Frog influence is shown : plant shorter, flower spike less compact, flowers strongly tinged with green or dull coppery red (colours never seen in the Marsh Orchid), flowers tilted downwards, sometimes almost horizontal (this point is very characteristic of the Frog), spur very short. Five plants have been found, no two alike. Found by P. M. Hall near Winchester, June 24, 1912.’

Here follows a minute description of the two chief forms by Rev. R. Quirk. See *Rep. B.E.C.* 508, 1910.

To this Mr. P. M. Hall adds a note (it must be borne in mind that at this time *praetermissa* had not been described) : ‘ The Orchid

hybrid found last June near Winchester was at first assumed to be most probably *O. maculata* × *Habenaria viridis,* though Mr. Druce and Miss Corfe who made the excellent drawings of this plant, suggested quite independently that *Orchis latifolia* was one of the parents, and Mr. Quirk was inclined to think *O. incarnata* might possibly prove to be the other parent, though he leant to the *maculata* parentage. This year the plant reappeared, and the suggestion at once occurred to the finder: for Marsh Orchis parentage is strongly suggested by the deep red markings on the lip and by the hollow stems. On examining the plants in the immediate neighbourhood there appeared to be two forms of the Marsh Orchid present, one being *incarnata* and the other what would ordinarily be called *latifolia.* But it seemed probable that these latter plants were not really *O. latifolia* but a hybrid between *O. incarnata* and *O. maculata,* which also grows in the neighbourhood. This view has been confirmed by Mr. Druce. . . . That the new hybrid has *O. incarnata* × *maculata* and not the former alone for one of its parents, is proved by the spotted leaves in several instances. It is probable, therefore, that the correct pedigree of this new hybrid is:
$\left.\begin{array}{l}\text{O. maculata}\\ \text{O. incarnata}\end{array}\right\}$ × H. viridis.' (*Winch. Bot. Rep.* 1912-3, p. 8).
See figures t. I, f. A, B.

This is followed by a paper by R. B. Ullman and P. M. Hall, a note on a section of the Genus Orchis which treats of 'the plants included under the old *Orchis maculata* L. and *O. latifolia* L.' As *praetermissa* had not then been separated, nor *O. Fuchsii* described, it is interesting to see what careful and suggestive observations these students made on 'The forms which have been collected in Hampshire entirely, with the exception of a few forms of *maculata* from the west of Ireland. . . . Hampshire possesses almost every known form and hybrid, many of them growing in great profusion in close proximity.' The first group consists of the solid-stemmed plants, and is represented by two species, *O. maculata* L (*O. Fuchsii*) and *O. ericetorum* Linton (*O. maculata*). The characters of these are well given, and 'the second is a well marked plant,' of which 'specimens examined from Scotland, Ireland and five English counties agree very well together and with the original description of Welsh plants in Webster's *British Orchids* under the name of *O. maculata* var. *praecox*. This sub-species has recently been found at Otterbourne, and is a record for this district of Hants. There is some doubt whether *ericetorum* is not merely a soil-form of *maculata,* though both plants have been found growing in the same meadow at Otterbourne and retaining their distinctive characteristics, yet some Irish specimens seem to show considerable variation of *ericetorum* in the direction of *maculata* without hybridisation.' It is quite possible that these variations are the result of hybridity : such are not uncommon, and come under *Fuchsii* × *maculata* = × *O. transiens* Druce. The authors then continue : 'The second group, which consists of hollow-stemmed plants, is far more perplexing. Three types appear to stand out, two with purple, and one with flesh-coloured flowers. The latter . . . is the *O. incarnata* L. A hybrid, *O. maculata* × *O. incarnata* (true), was found this year at Compton and identified at Kew. Besides its colour *O. incarnata,* form I, may be distinguished by its small reflexed flowers and dense cylindric spike. The form found by Mr. Druce in Oxfordshire appears from a drawing, in its larger spike and larger flowers, to approach more nearly to the next type, which in Hampshire is very distinct from the flesh-coloured plant. Let us call this next plant *O. incarnata*, form ii [my *O. praetermissa*]. It is distinguished by its purple-coloured, larger flowers and spotted labels, laxer spike and long narrow unspotted leaves. Both forms have green leaves hooded at the apex, generally broadest at the base. A form of ii has shorter leaves, broadest in the middle and is less erect : while another dwarf form with suffused spots on the labels and very narrow, folded leaves grows on the Downs. Hybrids between *maculata* (Fuchsii) and *incarnata* ii (praetermissa) and between *maculata* (Fuchsii) and the dwarf form of *incarnata* ii have been found near Winchester, the latter confirmed by Mr. Druce : also the parallel cross between *ericetorum* and *incarnata* ii [*praet.*] has been found ; and, lastly, some very critical plants, apparently intermediates between this plant and the next, to be dealt with. These plants, whatever they should be called, at any rate beyond doubt exist as definite forms varying within given limits.' *Orchis latifolia* is then alluded to, although 'its very existence . . . is called into question, it is best described as a stouter but less erect plant than the preceding, with shorter and broader leaves, not hooded, and widest in the middle and spotted with chocolate-coloured blotches, sometimes green in the centre: the flowers are dark in colour and the labels are marked with lines, not spots: it flowers quite a fortnight later than *incarnata*. This has been described as *latifolia*: but it is doubtful whether really *incarnata* ii [*praetermissa*] ought not to be given specific rank as *latifolia*, the term *incarnata* being confined to *incarnata* i, and all marsh orchids with spotted leaves being classed as hybrids with *maculata*. But this plant is distinct from evident first generation hybrids, and possibly exists as a constant species in place where one of the so-called parents does not any longer exist. It may possibly represent the result of hybrids self-fertilising for some generations and so producing in time a type breeding true: but this point again must be decided by experiment.' The editor adds a pertinent note 'On the Mendelian hypothesis, the hybrid DR, exhibiting imperfect dominance should throw DD and RR in the generation F, supposing that a simple pair of allomorphs are involved, giving reversions to the types of both grandparents. But there is no reason to suppose we are necessarily dealing with a single pair, and in more complex cases the pure recessive would appear so rarely that it might not be observed for a long time in the locality. The authors go on to say 'By this hypothesis the so-called *O. latifolia* represents a species now breeding true, but originally of hybrid origin, and at any moment liable to result from the same causes that produced it in the first instance. In localities where this plant and *maculata* alone grow together as at Ampfield, hybrids have been found. Also some plants sent to Mr. Druce as *incarnata* ii × *ericetorum* were named *latifolia* × *ericetorum*.' These I should now refer to *praetermissa* × *supermaculata*. The authors express their hope 'that this attempt to explain the difficulties of the problem will encourage others to add their evidence and support. A list is appended, which is intended as a suggested arrangement of the various species and hybrids in the most convenient order.' This is here given, the first column being the author's names, the second the names which the Secretary now suggests:

HALL & ULLMAN.	DRUCE.
1. *O. maculata* L.	1. *O. Fuchsii* Druce
b. O'Kellyi Druce (*O. immaculata* O'Kelly ined.)	bis *O. O'Kellyi* Druce
× *O. Kellyi* = *O. lilacina* O'Kelly.	× *Fuchsii*

HALL & ULLMANN.	DRUCE.
2. *O. ericetorum*, Linton × *maculata* (hybr. or interm.).	2. *O. maculata* L. × *Fuchsii* = *O. transiens*.
3. *O. latifolia* L. × *maculata* ? × *ericetorum*	3. ?
4. *O. incarnata*, form ii, × *maculata* × *ericetorum* × *latifolia* (?hybr. or interm.).	4. *O. praetermissa* Druce × *Fuchsii* × *maculata* × ?
5. *O. incarnata* L., form i, b. *ochroleuca* Wüstnei × *maculata*.	5. *O. incarnata* L. b. *ochroleuca* Wüstn. × *Fuchsii*.

N.B.—Mr. Druce's form ii is placed before his form i, as it approaches more nearly to *latifolia*, which again is nearer to *maculata* than either of the *incarnatas*.'

A list of the hybrids found near Winchester is appended. One of these, *Gymplatanthera Jacksoni*, is figured on t. 12. It is *Habenaria Gymnadenia* × *viridis*, Druce, × *H. Jacksonii* (*Winch. Coll. Rep.*), see *B.E.C.* iii, 33, 1911.

The Report of the Winchester Coll. Society, 1913-5, contains many notes by the President, the Rev. S. A. McDowall: they include the record of *Habenaria conopsea* × *O. maculata* found by J. C. Lloyd Edwards (see Plate 2, fig. A).

Two other specimens, one very fine, have since been found in different localities by Mr. Furley and Mr. Quirk. A very beautiful form of *Gymplatanthera Jacksoni* has also been found this June by the Rev. R. Quirk, which differs considerably from those previously obtained (this is described): 'The inflorescence is more like that of *viridis*; the spur is short (5-6 mm. when fully developed: less in the younger flowers); the labellum is shaped like that of *viridis* and when first open, the rose-purple coloration appears on the lateral lobes only, the rest of the labellum being a delicate primrose-green, which gradually changes to rose-purple almost all over. The tilt of the flowers is marked (see plate).

On the Mendelian hypothesis, assuming that there are several pairs of allelomorphs, it is not at all strange that various intermediates between the two parents should occur; but the possibility of the occurrence of forms differing markedly from both parents must not be overlooked. If these occur, their nature could only be proved by inbreeding.

Mr. Quirk has also found several somewhat peculiar forms on the Downs, which Mr. Druce inclines to call hybrids between *O. Fuchsii* and *O. maculata.*

H. McKechnie and J. C. Lloyd Edwards have also brought in a number of intermediate Down-forms of the *maculata* type, which are puzzling, but may be mostly mere varieties. One similar to *maculata,* but with a labellum having a very long mid-lobe and narrow side-lobes, long purplish bracts, stout stem (solid), dense spike, and pointed, rather broad leaves, slightly spotted with very small spots—may be a hybrid between *praetermissa* and *maculata* or *Fuchsii.*

A form fairly plentiful in the New Forest near Matley Wood, resembles *incarnata* in all points except the colour of the flowers, which is that of *praetermissa.* Whether it is a hybrid between these forms, or only a soil variety of *incarnata,* is uncertain. A similar flower which grows with this is white, and appears to be white *incarnata.*

The examination of large numbers of Marsh Orchids during the present summer has revealed a bewildering series of intermediates. *O. latifolia, O. praetermissa,* and *O. incarnata* are well-marked types, but they seem to be linked by a graded series of forms, which may be hybrids, but which, on the other hand, may simply show that the Marsh Orchids constitute either a recent group which has not yet settled down into well-defined species, or else a species that has become variable and is breaking up into three types. Particularly puzzling was a form brought to me by R. F. and D. G. Lowndes from some watermeads near Winchester, which appeared from the deeply cut labellum and crest, somewhat appressed, spotted, and pointed leaves, to be a hybrid between *O. praetermissa* and *O. maculata,* in which the spots on the leaves had green centres, as in the true *latifolia.** I find I have no note as to the stem, but I believe it was solid: several of the peculiar orchids brought in with it from the same locality certainly had. Typical *maculata* and *praetermissa,* and not quite typical *latifolia* also grew there in plenty. This suggests that there may be something in the theory that *O. latifolia* is itself of hybrid origin.'

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* Several Down-forms with green-centred spots have been found since, apparently of the same parentage.

The President has also inserted the note written by me in the Report, *B.E.C.* for 1914, on *Habenaria Gymnadenia* × *Orchis praetermissa.* The beautiful painting by Miss Corfe is reproduced on Plate 10.

The Report for 1915-7 contains the following interesting paper by the Rev. S. A. McDowall :—

' Several interesting hybrids have turned up during the past two years :—A new form of *H. viridis* × *G. conopsea* (*Gymplatanthera Jacksonii*). *O. Fuchsii* × *H. vididis* (two types), *O. Fuchsii* × *O. praetermissa* (Plate 13), *O. praetermissa* × *O. incarnata, O. praetermissa* by *O. latifolia, O. ericetorum* (= *O. maculata Linn.*) × *O. incarnata, O. ericetorum* × *O. praetermissa.* Notes on these will be found in another place. Possibly *Fuchsii* hybridises with *ericetorum:* some specimens I have seen suggest this, but I feel very uncertain on the point. Last year Mr. Quirk obtained four more specimens of *H. conopsea* × *O. Fuchsii,* originally found by J. C. Lloyd-Edwards (Report, 1913-15, p. 9).

' A promising field of research is still offered by the complex group of Marsh Orchids. Ullman and Hall laid a foundation in their careful analysis (Report, 1911-13, p. 1). As has already been stated, Philipson-Stow and McKechnie started a closer investigation of the varieties last year, and McKechnie and Lowndes have carried on the work during the present summer. Their results will be found on another page.

' The examination of some hundreds of these plants inclines me more and more strongly to the belief that *O. latifolia* and *O. Fuchsii* (=*maculata*) represent a single dimorphic species, of which the down-forms have become fairly stable, while the marsh-forms show every kind of intermediate. Neither label, colour, shape of leaf, type of spotting (rings, or simple spots, or blotches), hollowness or solidity of stem, afford any definite guide in these last. While the typical marsh form of *latifolia* is perfectly distinct from the typical marsh form of *maculata* (*Fuchsii*), these typical forms being the commonest, nevertheless every possible intermediate, every conceivable combination of characters, exists. On the other hand, *praetermissa* seems to be a constant and definite species, at any rate in this district, though it is very ready to hybridise with the other marsh-forms. *O. ericetorum,* again, appears to be a perfectly well-marked and stable species; and it seems as if the Linnean name of *maculata* should be definitely assigned to this type. *Incarnata* also is unquestionably a definite species, although a variety found, together with the white form, in Matley Bog possesses a purple colour even deeper than that of *praetermissa.* The *form* of the flower is, however, perfectly characteristic and constant. Both of these last (*incarnata* and *ericetorum*) are inclined to hybridise with other forms, and this may have helped to cause the confusion which exists in the minds of botanists in regard to the Marsh Orchids.

'Of course, only a very long and laborious research directed towards the production of artificial hybrids could definitely solve all the problems, and the long period of immaturity in orchids renders this out of the question for a school society. Nevertheless, personally I have little doubt in my own mind that we ought to admit *incarnata, praetermissa,* and *ericetorum* as true species, and *latifolia* — *maculata* (= *Fuchsii*) as a dimorphic species on the way to establish two races—a process almost accomplished in the down-forms. The two last are easily distinguished in their typical forms. Both have lined labels (*praetermissa* is spotted), but in *maculata* the label is deeply cleft, with a long, narrow mid-lobe; in *latifolia* it is more or less bracket-shaped, the mid-lobe being, however, more pronounced than this description implies. *Maculata* tends to a solid stem, *latifolia* to a hollow; *maculata* tends to spotted leaves, *latifolia* to ringed: the leaves of the latter are wider, blunter, and more fleshy. The colour of the flower in *latifolia* is generally a deepish purple; in *maculata* the ground is lighter, so that the lines are more marked. There are other points of difference, but these will generally serve to distinguish the species.

'I may add that I set down these views before reading McKechnie's report, in order that the opinion I have formed should be independent and not coloured by the work of another.

Reproductions of Miss Corfe's paintings of new hybrid Orchids, and of a painting of *praetermissa* × *Fuchsii* most kindly done for us by Mrs. Godfrey, as well as photographs of one or two of the

Marsh hybrids,* will be found in this Report, though no photograph can do justice to the beauty of the paintings.

NOTES ON SOME NEW HYBRID ORCHIDS.

H. McKechnie (c).

Habenaria viridis × *Gymnadenia conopsea* (*new form*).

This plant was found on the downs with both parents by the Rev. R. Quirk in June, 1916. Plant about 6ins. in height. Leaves small and narrow, with no trace of *H. viridis* in them. Spike a little laxer than in *G. conopsea*. Sepals as long as the petals, pinkish on the back and yellowish in front. Petals yellowish on both sides. Lip longer than in *G. conopsea*, pink at the sides and yellowish-white in the centre. Spur shorter than the ovary, and more slender than in *H. viridis*. The plant was interesting in that it was nearer to the Frog Orchid than the original form. Mr. Jackson's original specimens suggested rather two parts Fragrant to one part Frog. See Plate 12.

Orchis Fuchsii × *Habenaria viridis* (*new form*).

This plant was found on the downs, where both parents grow freely, on 22nd June, 1917. Stem slender, green among the flowers. Leaves narrow-linear, so much keeled as to be almost folded, unspotted, not as thick as in *H. viridis*, erect and curving outwards. Bracts about the same length as the flowers. Spike colour, as in *O. Fuchsii*. Central sepal reflexed at the tip from the petals; lateral sepals (2½ lines long) extended sideways and a little upwards, dotted with purple, lip (2½ lines long) one-lobed; lower half and centre of upper half white, slightly tinged with light purple, with two yellow blotches on the sides of the upper half; inclined more downwards than in *O. Fuchsii*. Spur blunt; thicker than in *O. Fuchsii*, and more cylindrical than in *H. viridis*.

The plant in general gave one the impression of *O. Fuchsii;* additional points of resemblance were the shape and form of the leaves, and the light purple colour of the flowers. The influence of

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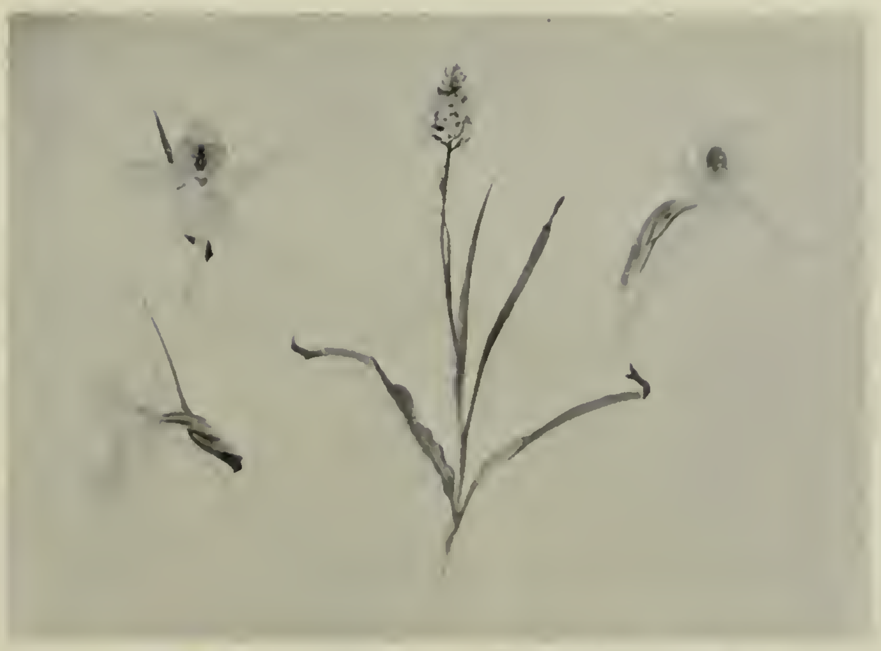
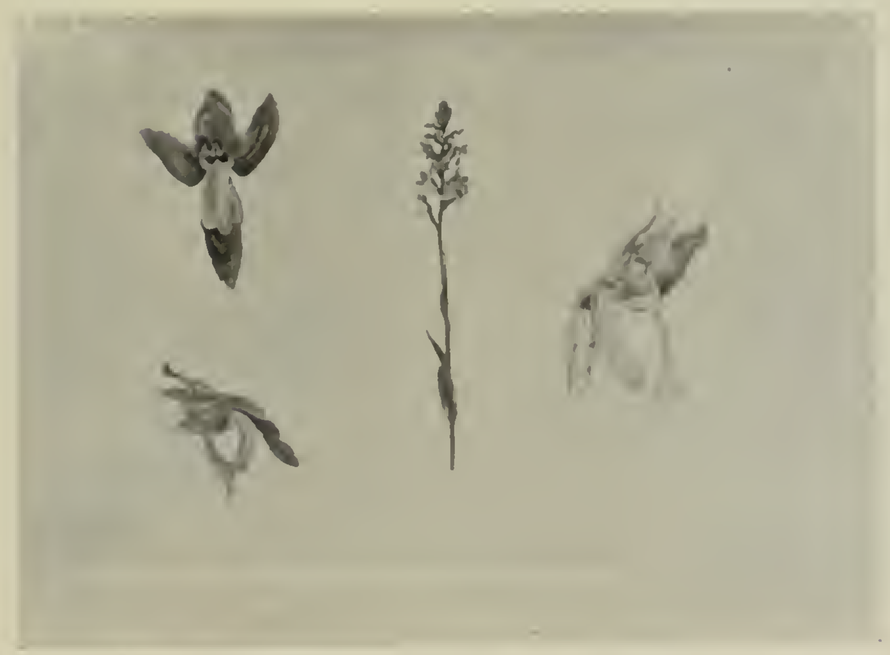
* About one of these, *incarnata* × *ericetorum*, I feel some slight doubt. I think the attribution is justified, but other botanists may differ. It seemed desirable to publish a photograph of the spike in order to give to others an opportunty of judging.'

PLATE 14. FIG. A.



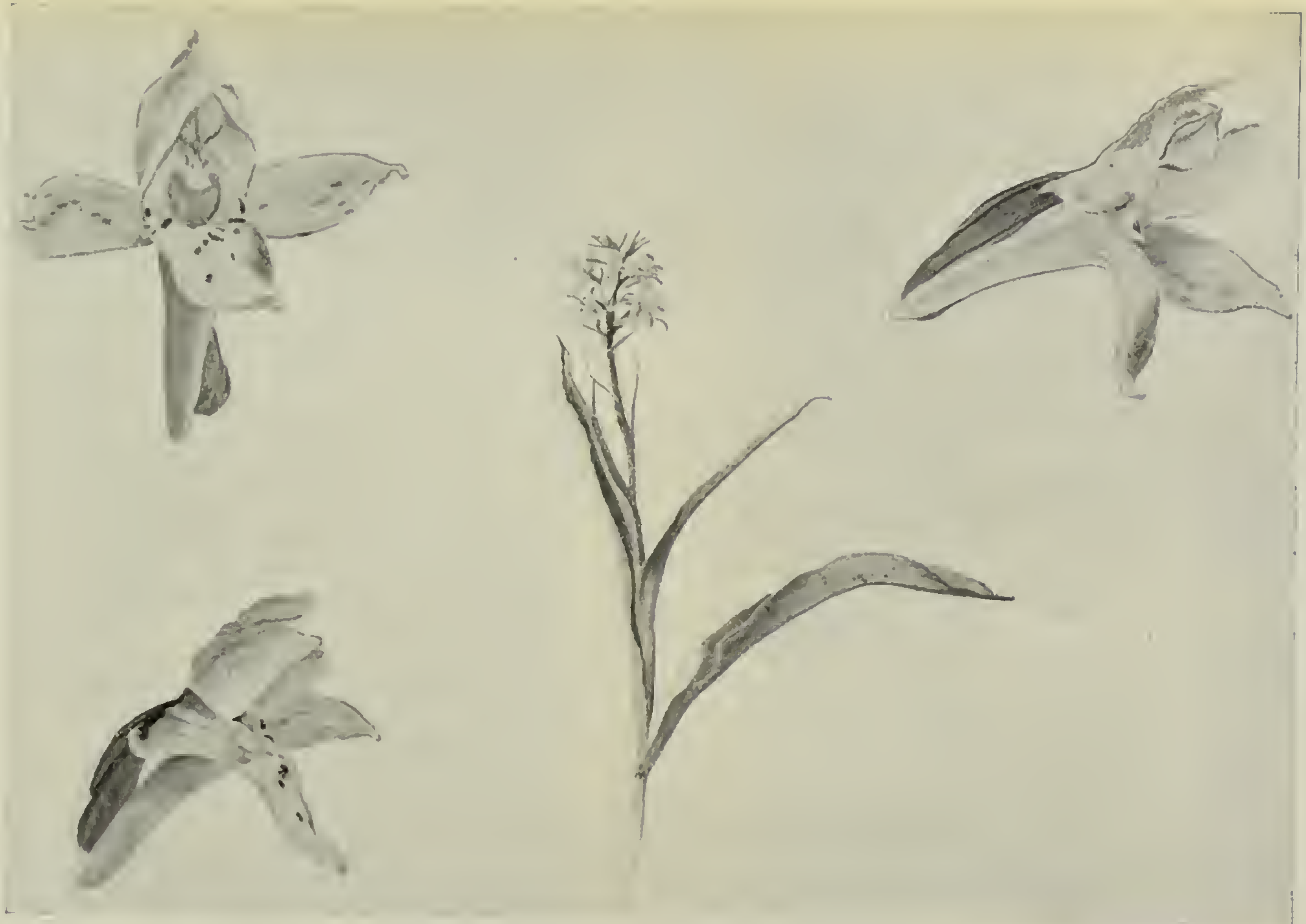
HABENARIA GYMNADENIA × ORCHIS MACULATA.
(H. conopsea × Orchis maculata.)
From water-colour drawing by Miss B. Corfe. Photo, W. Abley.
(Lent by the President, Winchester Coll. Nat. Hist. Soc.).

FIG. B.



HABENARIA GYMNADENIA × VIRIDIS.
(H. conopsea × viridis = Gymplatanthera Jacksonii, *Winch. Rep.* 8, 1913.)
From water-colour drawing by Miss B. Corfe. Photo, W. Abley.
(Lent by the President, Winchester Coll. Nat. Hist. Soc.).

PLATE 15.

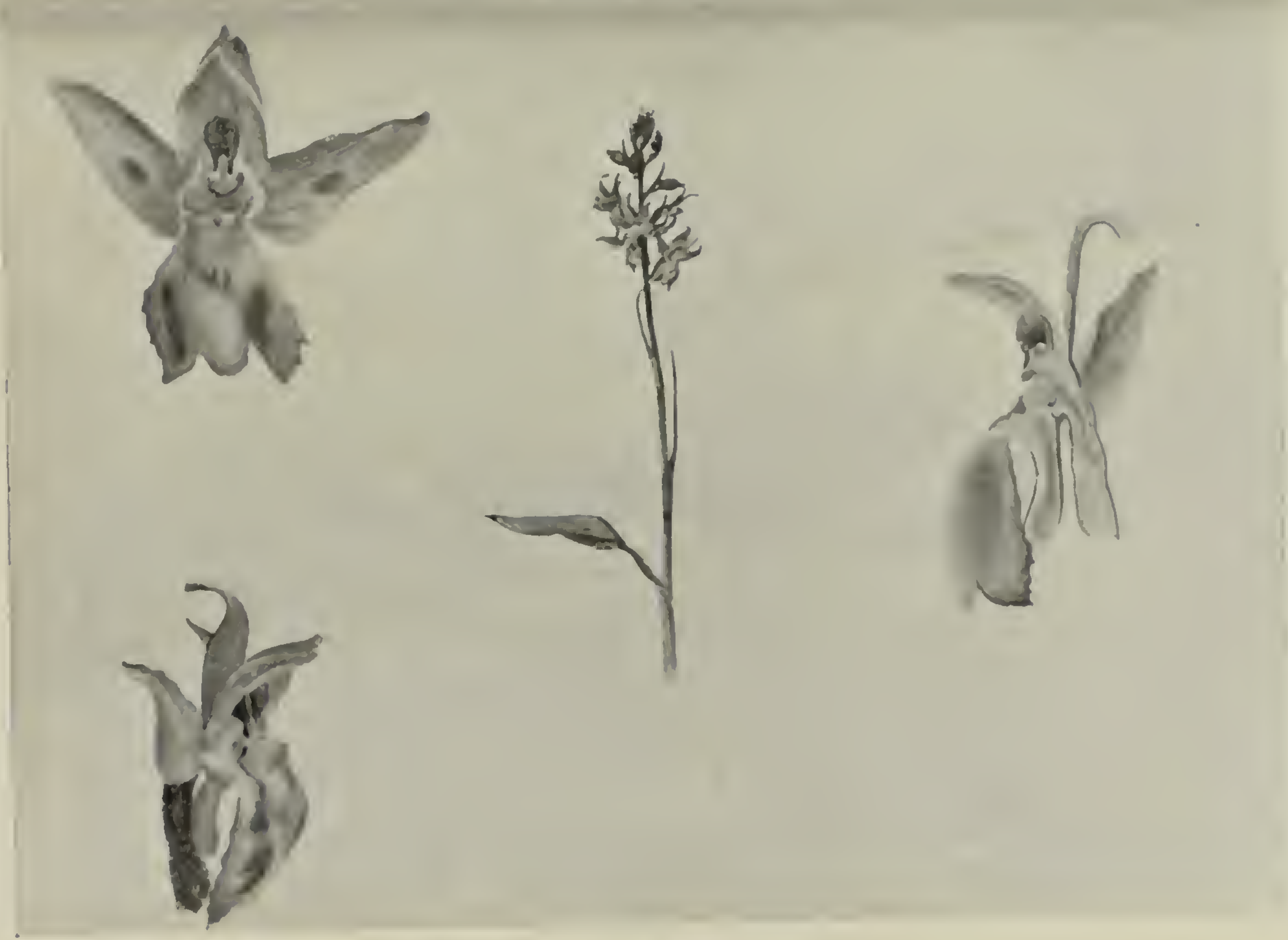


ORCHIS FUCHSII × HABENARIA VIRIDIS.

From water-colour drawing by Miss B. Corfe. Photo, W. Abley.

(Lent by the President, Winchester Coll. Nat. Hist. Soc.).

PLATE 16.



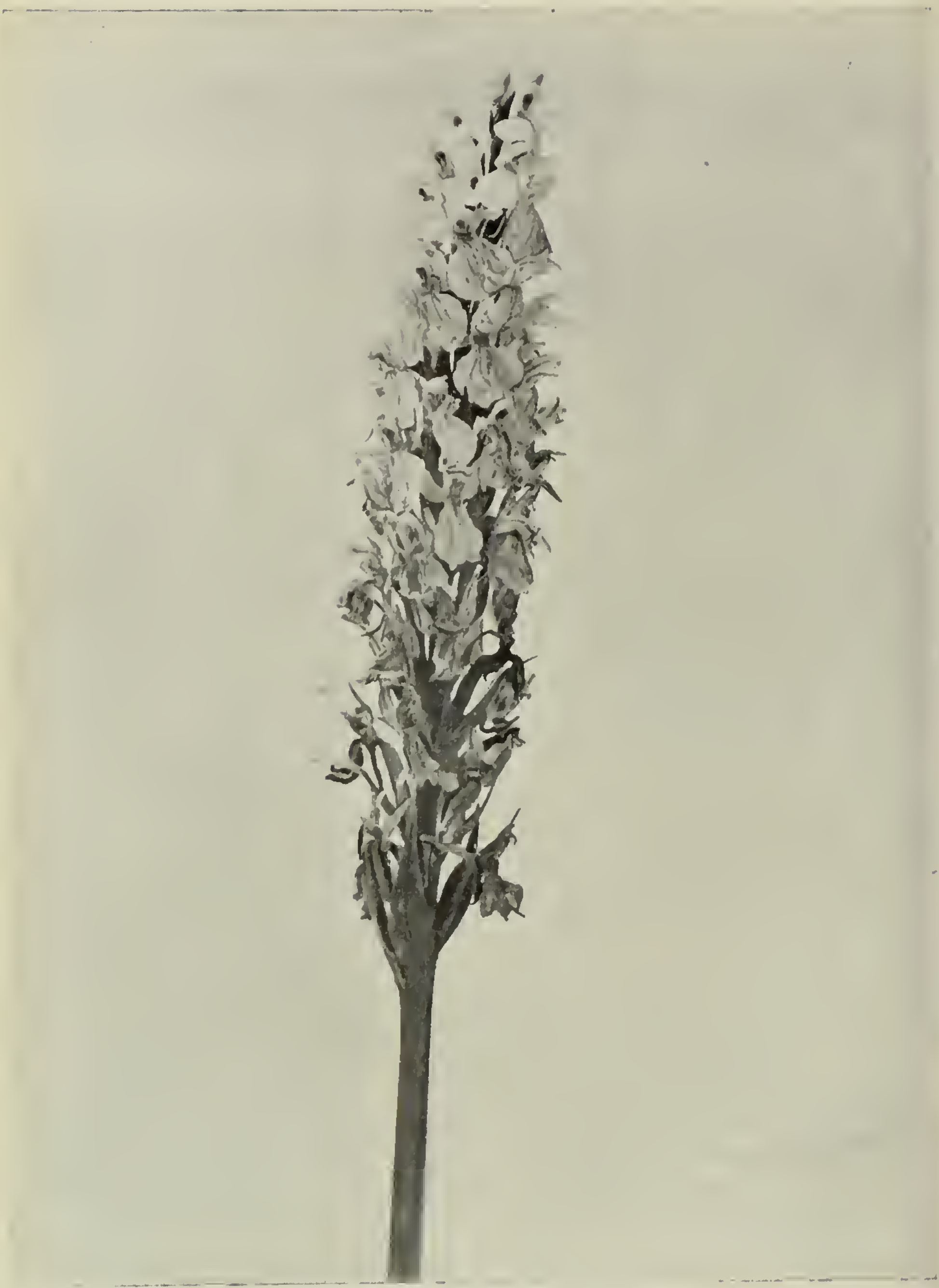
ORCHIS FUCHSII × HABENARIA VIRIDIS.

From water-colour drawing by Miss B. Corfe.

Photo, W. Abley.

(Lent by the President, Winchester Coll. Nat. Hist. Soc.).

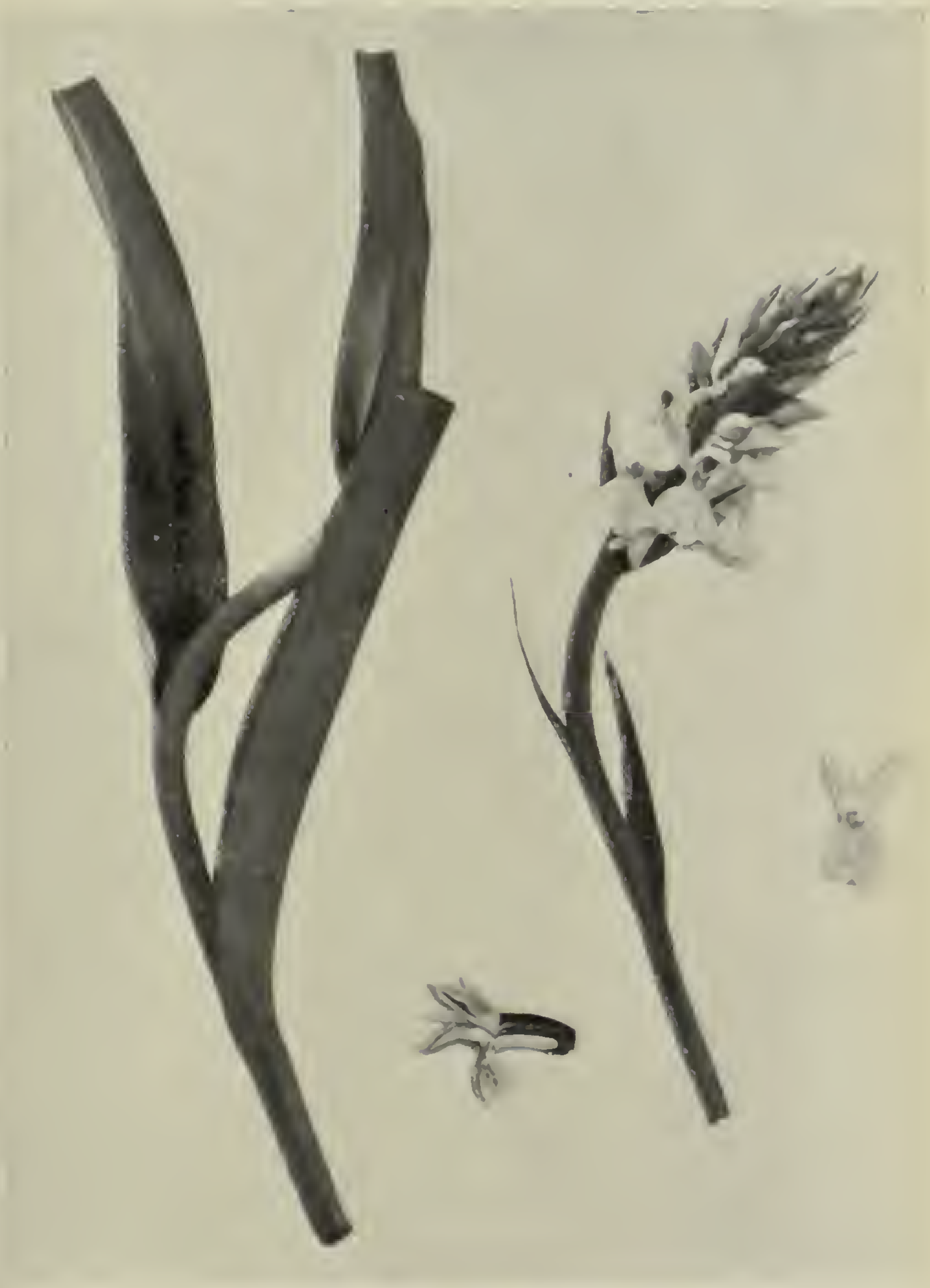
PLATE 17.



ORCHIS INCARNATA × MACULATA.

Photo, W. Abley,

(Lent by the President, Winchester Coll. Nat. Hist. Soc.).



ORCHIS PRAETERMISSA × FUCHSII.

Photo, W. Abley.

(Lent by the President, Winchester Coll. Nat. Hist. Soc.).

See Rep. 1917, pp. 15, 19.

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H. viridis is shown strongly in the remarkable lip and the inclination of the flowers.

The form found last year by Mr. Comber and G. P. Philipson-Stow was nearer the Frog Orchid, while this more closely resembles the Spotted. See Plate 15.

Orchis maculata Linn. (= *O. ericetorum* Linton.) × *O. incarnata* Linn. See Plate 17.

This plant was found by D. G. Lowndes in July, 1917. Stem just over a foot in height, tinged with purple among the flowers, hollow. Leaves narrow, linear, broadest in middle, unspotted, strongly keeled (almost folded), hooded at the tip. Spike 3 ins. in length. Flowers closely packed, generally light purple in colour, and giving the impression of *O. maculata* Linn. Lip slightly reflexed with the edges upturned (as in *O. praetermissa*); in shape narrower than in typical *O. maculata,* but with line markings suggestive of that plant; lobes equal in length, the central one small and rounded (as in *O. maculata*). Spur slender, conical, curved. Bracts larger than flowers below, smaller above.

The plant gives one the general impression of *O. maculata*, but the unspotted leaves, hollow stem, and slightly narrower and reflexed lip suggested the presence of some other orchid, presumably *O. incarnata.*

H. viridis × *O. Fuchsii.* See Plate 16.

Found on the downs near Winchester by G. Philipson-Stow and Mr. Comber, June, 1916. Plant, 13½ cms. high; leaves, 5½ cms. long, 1.4 cms. broad, spotted; spike, 2 cms. high; flowers, six, rather loose. Bracts dull green, slightly tinged purple, rather longer than the flower. Unopened buds dull purple with slight greenish tinge, nearly green underneath. Expanded flowers, green label, two rows of suffused spots, and one elongated spot in the middle. Lateral sepals with one or two spots. Corolla 14 mm. long by 15 mm. broad to tips of lateral sepals. Labellum greenish in centre, purplish edges, two purplish lines of suffused spots, one or two spots forming incomplete medial line. Exterior lobes 4 mm. long, curved inwards at tips. Central lobe reflexed outwards 1½ mm., maximum width 7 mm. Labellum hangs straight down. Lateral sepals 7 mm. long, about 3 mm. broad, tapering to narrow point, one or two large spots; green, with tinge of purple. Under sepal somewhat shorter, recurved at tip. Petals 6 mm. long. about 2½ mm. broad at base, narrowing to rather blunt point, very pale greenish in colour with faint trace of purple. Anthers very similar to 'A' in Report, 1912, p. 6. Spur 4 mm. purple curved inwards towards labellum; bulging towards base to maximum, breadth 1 mm. Ovary spirally twisted; brownish purple.

Note.—A very fine but somewhat overblown specimen of this cross was found this year by McKechnie, July 13th, as well as two splendid examples of Lloyd-Edward's type of *conopsea* × *maculata* (*Fuchsii*).—Report, 1913-15.

S. A. McD.

O. ericetorum × *O. praetermissa.*

Leaves faintly spotted (at the tips only), keeled, closely folded, very narrow, erect: abortive leaf at foot of stem.

Flowers.—Sepals spreading, lip wide, scarcely three-lobed lip, sepals, petals, mauve spotted with crimson purple. Spur slender, conical, slightly curved. Otterbourne.

O. ericetorum × *O. latifolia.*

Leaves erect, keeled, hooded, widest in the middle, heavily blotched.

Flowers. — Sepals spreading, lip very wide, mid-lobe longest. Sepals, lip, petals pinkish mauve, lip lined with bright mauve. Spur slender, conical, slightly curved. Otterbourne.

D. G. L.

O. praetermissa × *O. incarnata.*

Form found by Colonel Godfery (June 21st, 1917). Leaves: *praetermissa* type. Flowers: small, with narrow label, of *incarnata* type, but with triangular mid-lobe; suffused spots; whole flower deep purple, but not the same colour as purple *incarnata*. Label not reflexed, even when faded; showing *praetermissa* type in its flatness and forward-curving margins.

Another form, found by McKechnie, had flowers somewhat reflexed.

O. praetermissa × *O. latifolia.*

Form found by Colonel Godfery (June 21st, 1917). Leaves: *praetermissa* type, but coarsely, though rather faintly, spotted. Flowers: *praetermissa* type, but lined; mid-lobe typical *praetermissa*, but rather long.

Another form, from the downs, found by Lowndes, had ringed leaves and spotted labels.

O. praetermissa × *O. Fuchsii.* See Plate 13, 18.

Form found by S. A. McD. Leaves: *praetermissa* type, with very fine spots; rather blunter than usual. Flowers: mid-lobe very long: label deeply cut.

S. A. McD.

NOTES ON THE GENUS ORCHIS.

H. McKechnie (c).

The following remarks are the result of three years' work among orchids, almost entirely in the Winchester district. In a subject on which experts disagree our opinions do not pretend to be more than suggestions, but they do represent the result of much careful observation. The quotations, unless otherwise stated, are from letters written by the different authorities.

Two forms of the ordinary Spotted Orchid, *Orchis maculata*, are common in Hampshire. The one which grows on the Downs here has the narrower lip, with a mid-lobe fairly large in comparison with the lateral lobes, and generally the longest of the three. The other, found in the New Forest and at Otterbourne, is readily distinguished by its very broad label with an exceedingly small and short mid-lobe. The first of these two forms was commonly known as *O. maculata* (Linn.), the second as *O. ericetorum* (Linton). But Mr. G. C. Druce has shown that this last is the original *O. maculata* of Linnaeus,* and for the *O. maculata* (auct.) he has suggested the name *O. Fuchsii*. This nomenclature has been adopted throughout the article. The common Spotted Orchid of the chalk Downs round

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* Rep. Bot. Soc. and Ex. Cl. of B. S., 1914, vol. iv, Pt. I, pp. 99-105.

Winchester is therefore *O. Fuchsii* (Druce), and the broad-lipped plant generally found in peaty soils is *O. maculata* (Linn.).

The form of the lip is the best distinction between the two, but each varies a great deal, and often in the direction of the other. Sometimes, for instance, the lateral lobes of *O. Fuchsii* increase in size at the expense of the middle lobe. Sometimes again the three divisions of the lip in *O. maculata* (Linn.), (= *O. ericetorum* [Linton]) become more nearly equal. A useful criterion, which does not vary with the size or shape of the lip, is that in *O. Fuchsii* the lateral lobes are quite distinctly notched about the middle of the outside: in *O. maculata* (Linn.) this is not usually the case; but the notching does sometimes occur, so that this criterion is not absolute. Another difference, which is not always constant,* is that the lowest one or two leaves on the stem of *O. Fuchsii* are broader, shorter, and more obtuse than the ones next above them; while in *O. maculata* (Linn.) the lowest is the longest, and is the same shape as the others.

Many other supposed distinctions, such as the number of bracts on the stem, the luxuriance of the markings and the leaves, the habit of the plant, and the colour of the flowers have been found to be dependent upon soil and situation. It may, however, be generally stated that the flowers of *O. maculata* (Linn.) are much larger, and the lip more prominent, than in the case of *O. Fuchsii.* As to the matter of soil it has been said that the former is found only on peaty and silicious soils, while the latter is confined to chalk, quartz, and flint; but such distinctions do not seem to be always exact. *O. maculata* (Linn.), however, certainly has a preference for damp, heathy places, and *O. Fuchsii* for dry downs.

It will therefore be realized that it is not always easy to assign a plant to one or the other of these two forms; but on the whole it seems probable that they are distinct. Mr. Druce has assigned specific rank to both, and Rev. E. S. Marshall agrees, having known them apart for fully thirty years. The typical forms of the two are certainly very different, but intermediates are found not infrequently. On the other hand the two species grow in the same meadow at Otterbourne and yet retain their characteristics. Even if they are merely soil forms, as has been suggested,† on the analogy of the Hieracia and Rosae, there is no reason why they should not be ranked as species.‡

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* Obvious *O. maculata* (Linn.) have been found both near Otterbourne and in the West Highlands of Scotland which had one or more of these small leaves lowest on the stem.

The matter is still further complicated by the existence of a third plant (or form of *O. Fuchsii*), *O. O'Kellyi* (Druce), found in the Galway hills and at Inchnadamph, in West Sutherland. It has white flowers and unspotted leaves, and is nearer to *O. Fuchsii* than to *O. maculata*. The three segments of the labellum are 'narrow oblong, sub-acute, the middle segment longer and as broad as the lateral.'* Mr. Marshall, who found the plant in the last-named locality, 'thought it a new species, but hesitated to describe it as such.' A plant occurs sparingly on the downs here which has a lip whose three lobes are about equal in breadth and length, and which has white flowers and unspotted leaves. This however appears to be merely a white form of *O. Fuchsii*. If O. *O'Kellyi*, as we must believe on such good authority, is a true species, it seems very difficult to differentiate it from *O. Fuchsii, forma alba*.

Orchis Fuchsii and *O. maculata* are in most cases to be distinguished from the group of Marsh Orchids, to which we turn next, by their solid stems. But cases have occurred where typical *O. Fuchsii* growing in a damp situation has been found to have hollow stems. It seems therefore probable, judging from this, and and from the fact that Marsh plants in general have hollow stems, that an orchid in the dry ground can and will develop a hollow stem if it grows for long in marshy ground. Our original distinction therefore is not altogether a reliable one, although it will readily serve as a rough test. Nothing but first-hand acquaintance with the species concerned can enable a botanist to differentiate satisfactorily between marsh orchids as a whole and dry-ground orchids as a whole.

The group which formerly included only *O. latifolia* (Linn.) and *O. incarnata* (Linn.) is at first sight puzzling. The latter, however (here at any rate), is easily distinguishable from all other marsh orchids by the compact spike of small flesh-coloured flowers with a much-reflexed lip, the mid-lobe slightly longer than the other two. The flowers are nearly always flesh-coloured, but in a certain bog in the New Forest only varieties with either dark purple or pure white flowers are found.* The form which is common here (and we believe in the New Forest in general) does not grow in that particular bog. The albino variety provides a very interesting parallel to *O. O'Kellyi* in the dry-land group of orchids.

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† Mr. Druce suggests this as a possibility in Rep. Bot. Soc. and Ex. Club of B. S., 1914, Vol. IV, Part I, p. 108.

‡ I disagree.—[S. McD.]

* Rep. Bot. Soc. and Ex. Club of the B. S., 1914, Vol. IV, Part I, p. 108.

But after laying on one side these easily distinguishable forms of *O. incarnata*, we come to the often misrepresented *O. latifolia* (Linn.) and *O. praetermissa* (Druce).

These two have only recently been separated. *Orchis latifolia* is here generally distinguishable by its ringed leaves from the other two marsh orchids; but the Rev. E. S. Marshall says that his experience it is much more common with 'unblotched leaves.' Apart from this it may be distinguished from *O. praetermissa* by the shape, colour, and markings of the lip. In the latter the mid-lobe projects in a point beyond the ill-defined lateral lobes; the markings are dots (not lines) of only a shade darker red-purple than the rest of the lip; the edges are always upturned. In *O. latifolia* the colour and general appearance at once suggest *O. Fuchsii;* the lobes are well-defined and more equal in length, the markings are lines which stand out distinctly on the lighter purple background; edges hardly ever upturned. In *O. praetermissa,* too, the spur is shorter, thicker, and more abruptly narrowed than in *O. latifolia,* where it is more cylindrical and longer.

But besides these types there are intermediates or hybrids. All seem to vary a certain amount, especially in the lip. It does not seem likely that variation could account for a plant midway between two species; in such a case it must in all probability be a hybrid. There is no reason why the plants should vary towards one another. But undoubtedly the species are not quite constant, especially *O. latifolia.* However, it seems rather remarkable that there should be such a large number of hybrids as are found in watermeads here. We know no other genus in which they are so frequent. Of course

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* Both varieties also occur in Ireland; Mr. G. C. Druce has suggested that the former may be *O. Traunsteineri.*

O. Fuchsii and *O. maculata* hybridize just as freely,* and it is probable that all four species are really more or less constant.†

Two theories seem to suggest themselves. First, that *O. latifolia* is originally a hybrid between *O. Fuchsii and O. praetermissa*; second, that *O. latifolia* was originally the marsh form of *O. Fuchsii.* With regard to the first theory, a plant occurs in one place on the downs which is apparently—to judge from the flowers—a hybrid between *O. Fuchsii* and *O. praetermissa,* of which a small down form grows close at hand. That it is not *O. Fuchsii* pure is proved by the ill-defined lateral-lobes of the lip; that it has something to do with *O. praetermissa* is clear from the fact that the edges of the lip are upturned and from the shape. The markings of the lip, however, are lines, and the leaves are ringed. From these last two points it is argued that the plant is *O. latifolia,* but the ill-defined lateral lobes with upturned edges go to show that it is not. Typical down *O. latifolia* grows elsewhere in a similar situation, and in it the divisions of the lip are well defined. It seems therefore clear that the plant under discussion is a hybrid between *O. Fuchsii* and *O. praetermissa*; in fact, that an unspotted leaf crossed by a spotted one can produce a ringed leaf. This is corroborated by another plant which is an obvious hybrid with *Habenaria viridis* as one parent; what the other parent is, is disputed, but the two suggestions which are generally believed to be possible are *O. Fuchsii,* or else another hybrid—*O. praetermissa* (down form) × *O. Fuchsii.* Whichever we accept as the other parent, the result for our purposes is the same. Seven specimens of the plant under discussion were found; either one or two had ringed leaves. Here again we see that a spotted leaf crossed with an unspotted can produce a ringed leaf.

From this evidence it is clear that the rings on the leaves of *O. latifolia* might well be produced by the crossing of *O. Fuchsii* with *O. praetermissa.* On the other hand, on the analogy of the hybrid, one of whose parents was the frog, we should expect more plain or spotted leaved than ringed leaved plants of *O. latifolia* to occur in the marshes. This is not the case; by far the larger number of the *O. latifolia* to be found near here have ringed leaves. The fact that the form with unmarked leaves is the more common in general—a fact which we have on the evidence of Rev. E. S. Marshall—will not explain away the difficulty. We are dealing with one particular district, not with the country as a whole, and that district seems to be an exception.

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† [I rather disagree with these two statements. See Preface.—Ed.]

Of course the broad lip of *O. praetermissa* might well have been the parent of the smaller lip of *O. latifolia*. And the fact that the leaves and markings of the latter are larger than those of the former is no objection, as *O. latifolia* might readily, after beginning to breed true, have taken to marshes and developed luxuriant foliage and markings. It seems, however, that on the whole the evidence is against the theory that *O. latifolia* is a hybrid between *O. Fuchsii* and *O. praetermissa*.

The second theory, however, seems much more probable—that *O. Fuchsii* and *O. latifolia* were originally one and the same plant, and that those which established themselves in marshes developed in a different way to those which grew on dry ground. Anyone well acquainted with both will know that there is a great superficial resemblance between them; the colour of the flowers and the general appearance of *O. latifolia* at once suggest *O. Fuchsii* and *vice versa*. But the likeness is not merely superficial; the well-defined lobes and slightly reflexed edges of the lip, the line markings, and the long, slender spur are common to both. Also apparent *O. Fuchsii* has been found to have a hollow stem, and the two seem to run into one another to a very great extent.

On the whole, therefore, it seems probable that the two were originally one—in fact, to put it in a different way, *O. latifolia* is the marsh form of *O. Fuchsii*. If this is so, we can imagine that the marsh plants would grow more luxuriant, and develop hollow stems, while the blotches on the leaves would be expanded into rings as the foliage increased in size. The plants which grow on dry ground would retain their hollow stems, and assume a more stiff and wiry habit. But at present we cannot venture more than to state this theory as a possibility.

If these remarks are of any use to those interested in orchids, or may serve to give as clear an impression of the species as is now possible to those who are not altogether clear on the subject, our object will have been achieved. There is much more work to be done among the marsh and other Orchids of Hampshire, and we hope that others may find it equally engrossing."

The above paper includes some contentious matter, nor can I agree with the suggestion that in historic times *Fuchsii* and true *latifolia* were one and the same plant, but it is to be hoped that our members will interest themselves in the variations of this interesting group.

In connection with the subject we may direct our readers to the Presidential Address (Manchester Micros. Soc., 1916) by Professor F. E. Weiss, F.R.S., on the Seeds and Seedlings of Orchids. The lightness of the seeds is well known, Kerner (Pflanzeleben, vi. 851) says a single seed of Goodyera only weighs 0.000002 gramme, Gymnadenia being four times heavier, if such a term can be used for anything so supremely light, and Mr. Charlesworth, whose classic experiments in orchid culture are well known, estimates that a mature capsule of Gymbidium contains 850,000 seeds. But successful germination depends upon the presence of a fungus as in the Bee, Butterfly and Soldier Orchid, which penetrates the young embryo. The fungus belongs to the genus *Rhizoctonia*, of which there are several species.

This curious phenomenon explains the failure to obtain British orchid seedlings in bare soil. I once saw seedlings of *Aceras* among pine needles in France, and those of orchis *praetermissa* in a marsh at Cothill. It may be that soil from a field in which *Orchis morio* grows would be a good medium for culture, especially if sods of the turf itself were used. Prof. Weiss, quoting Dr. Rayner, says that *Calluna* exhibits the same peculiarity of germination but in the latter case the fungus is already present in the seed when the latter matures, the mycorhiza having penetrated through the whole plant even to the seed-coat.

REVISION OF THE BRITISH SPECIES OF SAGINA

By F. N. WILLIAMS, F.L.S.

Sect. 1. SAGINELLA Koch.

1. S. procumbens Linn.
   lusus pentamera Rouy & Fouc.
   lusus apetala Fenzl.
   f. ciliolata Schur.
   f. Druceana nobis.
2. S. apetala Ard.
   b prostrata S. Gibson.
3. S. ciliata Fries.
4. S. Reuteri Boiss.
5. S. maritima G. Don.
   a genuina Syme.
   b debilis Bab.
   f. prostrata Townsend.
   c densa Aschers.
   d stricta Clavand.
   e ciliata Nordstedt.

Sect. 2. SPERGELLA Koch.

6. S. subulata Presl.
7. S. scotica G. C. Druce.
8. S. Linnæi Presl.
   b nivalis Hook. f.
   c Boydii nobis.
9. S. nodosa Fenzl.
   b moniliformis Lange.

The history of *Sagina* in British Botany begins with John Goodyer's finding of *S. nodosa*, on August 12th, 1626, 'on the boggy ground below the red well of Wellingborough in Northamptonshire,' as recorded by Johnson, in his *Herball*, p. 568 (1633), where it is named 'Saxifraga palustris alsine folia.' The earliest printed record of a British species is, however, that of *S. procumbens* in the same author's previous work, *Iter Plantarum . . . in agrum Cantiamum*, p. 2 (1629),—'*Saxifraga Anglicana*, near Rochester.' The next species recorded were *S. apetala* in 1677 (Plot), and *S. subulata* in 1688 (Ray). There was then a long interval before *S. Linnæi* was found in 1789, by G. Don, in Perthshire (specimens in

Herb. Kew.), incidentally referred to by Smith, *Engl. Bot.* t. 2105 (1810), as previous to 1794.

English names for the commonest species are first used by Ray, *Cat. Plant. Cantabr.*, p. 151 (1660):—'Saxifraga Anglica Occidentalium . . . Pearlwort, Chickweed-Breakstone.'

The comparative census of species of *Sagina* for different countries may be of interest, giving with each the authority, the date, and the estimated number of species:—

Throughout the World.—*Engler and Prantl* (1889) about	20
Europe.—*Gürke*, Plantæ Europææ, ii. p. 238 (1899) ...	20
Spain.—*Willkomm and Lange* (1878)	11
British Islands.—London Catalogue, ed. x (1908) ...	10
,, ,, British Plant List, including 1 alien ...	10
,, ,, (present revision, 1917)	9
France.—*Rouy and Foucard* (1896)	9
Austria-Hungary.—ex *Gürke* (1899)	8
Sweden.—ex *Gürke* (1899)	7
Denmark.—ex *Gürke* (1899)	7
Italy.—*Fanfani* (1892)	7
Switzerland.—*Gremli* 1885)	7
Norway.—ex *Gürke*	6
Germany.—*Garcke* (1885)	6
Belgium.—ex *Gürke*	5
Greece.—*Halacsy* (1900)	5
Russia.—*Ledebour* (1842)	5
Rumania.—*Kanitz* (1881)	4
Albania.—ex *Gürke*	2

SAGINA Linn. Gen. Plant. p. 118, n. 336 (1737); *Benth. and Hook.* f. Gen. Plant. i. p. 151; *Willk. and Lge.* Prodr. iii. p. 600: *Fanfani* in Parl. Fl. Italiana, ix p. 564; *Rouy and Fouc.* Fl. de France, iii. p. 284; *Jackson,* Ind. Kew. iv. p. 775.

Sect. 1. Saginella *Koch* Syn. fl. Germ. Helv. ed. 2, p. 117 (1843); *Willk. and Lge.* Prodr. iii. p. 601; *Rouy and Fouc.* Fl. de France, iii. p. 285; *Halacsy* Consp. fl. Græcæ, i. p. 246 (1900).—Flores tetrameri, staminibus 4. Petala exigua vel nulla. Annuæ vel perennes.

Subsect. 1. Procumbentes *nobis* (=subgen. Eu-Sagina sect.

Procumbentes *nobis* in *Journ. Bot.* 1896, p. 427).—Folia subulata aristata.

1. S. procumbens Linn.
2. S. apetala Ard.
3. S. ciliata Fries.
4. S. Reuteri Boiss.

Subsect. 2. Maritimæ *nobis* (=subgen. En-Sagina sect. Maritimæ *nobis* l.c.).—Folia linearia mutica.

5. S. maritima G. Don.

Sect. 2. Spergella *Koch* l.c. p. 118; *Willk. and Lge.* l.c. p. 602; *Rouy and Fouc.* l.c. p. 291; *Halacsy* l.c. p. 247.—Flores pentameri, staminibus 10 (raro 5). Petalia conspicua. Perennes.

6. S. subulata Presl.
7. S. scotica Druce.
8. S. Linnæi Presl.
9. S. nodosa Fenzl.

S. PROCUMBENS Linn. Sp. Plant. p. 128 (1753).

Perennis vel plurannua, procumbens, dense cæspitosa, glabra vel parce puberula, sempervirens. Rhizoma fibrosum. Caules 5-10 ctim., ex axillis foliorum rosulæ centralis sterilis undique prodeuntes, prostrati, radicantes. Folia circiter 12 mm., trinervia; caulina internodiis breviora. Pedunculi solitarii, terminales et axillares, sub anthesi et in fructu recti, post anthesin autem apice hamato-curvati. Sepala late ovata, exteriora 2 mm., interiora 2·4 mm., fructifera cruciatim patentia. Petala 1·6 mm., oblonga, interdum nulla. Stamina 2 longiora basi glanduligera, 2 breviora basi non glanduligera, sepalis æquilonga vel vix longiora. Capsula 2·2 mm. Semina dorso sulculata (*Pearlwort*).

Stat. Waste ground, damp places, fields, heaths, pastures, walls, bare spots; absent from a considerable area of meadow land, chalk downs, and from portions of arable land. Ascends to 1150 metres in Inverness-shire (*Watson,*— but I think the estimate is too high); to 1006 metres on the mountains of the Breadalbane district of Perthshire, on bare ground (*F. B. White*, Flora, p. 86), as on Ben Ein (*E. S. Marshall,* 1889, in Herb. Brit.); to 810 metres in Aberdeenshire (*Dickie,* Bot. Guide, p. 24); to 936 metres in Kerry, near the summit of Mt. Brandon (*R. W. Scully,* Flora, 1916, p. 46); to 750 metres in Wicklow (*Cyb. Hib.* ed. 2, p. 58); to 540 metres in Cumberland, in the springs on Great Gable, at the head of Ennerdale (*J. G. Baker,* Fl. Engl. Lake District, p.

48); to 600 metres in W. Yorkshire (*F. A. Lees*, Flora, p. 169); and to 800 metres in Northumberland, on the top of Cheviot Hill (*Baker and Tate*, Flora, p. 136).

lusus pentamera, Rouy and Fouc. Fl. de France, iii. p. 286.

Mr. G. C. Druce noticed such a sport or form about Sligachan, in the Isle of Skye, in 1908. Another collector, in 1913, collected similar examples not far off Skibost (*Bot. Exch. Club Rep.* 1913, p. 310). In the only French specimens I have seen there were one or two tetramerous flowers on the same plant. It can hardly be considered therefore as a definite form.

lusus apetala Fenzl. in *Ledeb.* Fl. Rossica, i. p. 339.

f. ciliolata Schur Emm. Pl. Transsilv. p. 108 (1867).

Syn.—*S. procumbens* var. *spinosa*, S. Gibson in Phytologist, 1842, p. 179 (the varietal name is in no way applicable to the small plant); var. *subciliata* Bischoff in Jahresb. Pollichia e. Ver. Bayr. 1849, p. 12. This form is not uncommon, and it shades off into the type. The leaves are margined with minute diaphanous setiform cilia, and in many specimens the leaves have but few. Near Killin, Perthshire, on a shady roadside bank it forms large cushions some two feet across. Crump, *Fl. Halifax*, 1904, p. 17, says that it is not uncommon in that district, from which there are specimens in Gibson's herbarium (in the Belle Vue Museum, Halifax); see also *Bot. Exch. Club Rep.* 1910, p. 548 (ref. no. 64). S. Gibson, an entomologist, is not to be confused with the better known George S. Gibson. Part of his herbarium is at Peel Park Museum, Salford.

f. Druceana nobis.

Pedunculi breves. Flores magis conspicui. Petala calycem æquantia. Syn.—*S. alpina*, G. C. Druce in Ann. Scott. Nat. Hist. 1892, p. 273; non *S. maritima* var. *alpina* Syme, Eng. Bot. ii. p. 117 (*i.e. S. alpina* G. Don ined. ex Journ. Bot. 1892, p. 378.

The plant here indicated was 'a small *sagina* [which] was gathered on the steep cliffs of Corrie Sneachda, and also on a rock near the waterfall which enters Glen A'an from Ben Macdhin.' This is on the Cairngorm mountains of Inverness-shire and Banffshire. It is also incidentally mentioned in the last edition of Babington's *Manual*, p. 59.

Baxter (*Phaen.* Bot. iii. 199, 1837) figures and describes a curious lusus 'one flower in the Botanic Garden at Oxford had forty-four perfectly formed petals all of which, in a fully expanded state, occupied a circle of only one-tenth part of an inch in diameter. . . It was first found by the Rev. H. Davies on a green near Beaumaris, Anglesey, in July, 1817.'

S. APETALA Ard. Animadv. Bot. Spec. ii. p. 22 (1764), t. 8, f. 1 (1763).

Annua, solitaria sive aggregato-cæspitans, glanduloso-puberula vel glabra. Cauliculi multi tenues e radicis collo egredientes, simplices erecti vel ramosi adscendentes, laterales atque centralis floriferi. Folia 2½—6 mm., omnia vel saltem superiora internodio duplo breviora, basi ciliata, supra plana, subtus leviter convexa, inferiora mox marcescentia. Anthemia laxa, pseudo-scorpioidea. Pedunculi terminales et axillares, deflorati recti, fructiferi internodio proximo subduplo longiores. Flores 2 mm. diam. Sepala ovato-oblonga obtusa cucullata, exteriora inflexo-mucronulata, interiora mutica, fructifera cruciatim patentia. Capsula matura erecta inclinata vel nutans, calyce ¼—½ longior. Semina ⅓ mm., rugulosa, dorso canaliculata.

Stat. Dry sunny places, wall-tops, garden-paths, and bare gravelly ground. Generally distributed, but local and rare in the Scottish Highlands.

B. *prostrata* S. Gibson, in Phytologist, 1842, p. 178.

Not infrequent. In Berkshire, *e.g.* it has been noticed at Southcote, Bagshot Heath, Wantage, and roadside near Bagley Wood (*G. C. Druce*, Flora, p. 98). In Hertfordshire, at St. Ippolyts (1913, *J. E. Little*). Var. *lœvis* Gibson l.c. is the common glabrous erect form; and var. *glandulosa-ciliata* F. W. Schultz, is the usual glandular form.

Arduino's figure leaves something to be desired. The sepals are drawn acute (which recalls *ciliata*). In fruit two are applied to the capsule and the other two are patent. The whole plant is invested with an obvious indumentation of patent hairs, which is not met with either in *apetala* or *ciliata*, which are both glabrous or have only the thinnest covering of light hairs.

S. CILIATI Fries in *Liljeblad* Svensk Flora, ed. 3, p. 713 (1816).

Annua, flavicanti-viridis, inferne glabra, superne glanduloso-puberula. Radix minus ramellata. Cauliculi multi tenues e radicis collo egredientes, a basi ramosi adscendentes, laterales atque centralis floriferi. Folia 2½—4 mm., omnia vel saltem superiora internodio duplo breviora, basi non ciliata, supra plana, subtus leviter convexa, inferiora mox marcescentia. Anthemia laxa, pseudo-scorpiodea. Pedicelli capillares, terminales et axillares, floriferi erecti, deflorati subarcuati, fructiferi internodio proximo longiores. Flores 2 mm. diam. Sepala ovato-oblonga obtusa cucullata, exteriora inflexo-mucronulata, interiora mutica, fructifera capsulæ stricte adpressa. Capsula matura erecta, calycem subsæquans. Semina rugulosa, dorso late canaliculata.

Stat. Dry sandy fields, heaths, commons, roadsides, dry banks and sand-dunes, from Jersey northward to Aberdeenshire (*A. Bennett,* Top. Bot. ed. 2, suppl. p. 19).

Benekin, in *Flora*, 1845, p. 721, maintained that the restricted *S. apetala* and *S. ciliata* were mere habitat states. His views were combated Babington, in *Bot. Gazette*, 1849, p. 174, and supported by Henfrey (*ibid.* 1850, p. 182). All these allied species have both glandular and non-glandular forms, which are mere states due to environment, and not actual varieties.

S. REUTERI Boiss. Diagn. Plant. nov. or. Ser. iii. fasc. 1, p. 82 (1853).

Annua, pygmæa, glabra vel parce glanduloso-puberula. Caules 2½—5 ctim., erecto-patentes, fere a basi dichotoma ramosi, internodiis brevibus. Folia inferiora 4—6 mm., internodia superantia, superiora vix 2 mm. Pedunculi breves setacei, plerumque dense glandulosi, fructiferi erecti vel inclinati, calyce multum longiores. Flores apetali. Sepala 2 mm., ovato-oblonga glabra mutica, fructifera adpressa. Capsula calycem excedens, valvis emarginato-truncatis.

This is an example of a plant whose geographical status has been reversed. First noticed by Reuter in the environs of Madrid in 1841, it has not been noticed elsewhere in Spain except in a convent garden near Saragossa. The plant has evidently always been overlooked in Britain and passed over as small examples of *S. apetala*. It could not have been otheriwse than a stray casual near Madrid, probably imported with cement or gravel, especially as it has not been noted in other localities in Spain.

In Britain the plant was first recorded on walls near a railway station in Worcestershire (see *B.E.C.* 358, 1892), and has since been noticed in other counties, under circumstances which indicate that it has been passed over as *S. apetala*, and is not a recent introduction. Since then it has been noticed in several other counties, as far apart as Hertfordshire, Pembrokeshire, and Angus, and is apparently widely distributed. Mr Druce has recently sent me specimens from Ilfracombe, in Devon (July, 1917) collected by C. P. Hurst.

S. MARITIMA G. Don Hort. Sicc. Brit. n. 155 (fasc. vii, 1806); et *Smith* Engl. Bot. t. 2195 (Sept. 1810).

Annua, glabra. Caules plures ramosi tenues fragiles patentes sæpius purpureo-fuscati, plurimum ex axillis foliorum basalium rosulæ prodeuntes, centrali etiam florifero elongato simul furcato. Folia basalia 6—12 mm., mox emarcida; caulina internodio breviora. Pedunculi solitarii, axillares et terminales, sub anthesi adscendentes, fructiferi erecti, internodio proximo multum longiores. Flores 5 mm. diam. Sepala ovata sæpius purpureo-tincta auguste scarioso-marginata, apice incurva, fructifera patentia. Petala nulla, vel rudimentaria, vel raro lanceolata calycem æquantia. Andræcium isomerum. Ovarium subsessile. Capsula sessilis erecta, calycem subæquens. Semina flavido-brunnea, irregulariter ruguloso-granulata, dorso profunde lateque canaliculata.

Stat. On the shores of the sea and tidal rivers, and in places liable to be occasionally overflowed.

A. *genuina* Syme Engl. Bot. ii. p. 117 (1864).

Caules tenues adscendentes ramosi, internodius elongatis. Folia incrassata. Capsula calycem æquans vel sublongior.

Syn.—*S. maritima* Jordan, Obs. Pl. Nouv. crit. Fragm. iii. p. 48, t. 3, f. A (1846).

B. *debilis* Bab. Man. Brit. Bot. ed. 5, p. 50 (1862).

Caules tenuiores decumbentes ramosi, internodiis elongatis. Folia incrassata. Capsula calyce subbrevior.

Syn.—*S. debilis* Jordan l.c. p. 49, t. 3, f. B (1846).

f. prostrata Townsend, Fl. Hampshire.

C. *densa* Aschers. in Verhandl. Bot. Ver. Brandenburg. iii. iv. p. 390 (Dec. 1862).

Caules tenues adscendentes perramosi internodius brevibus. Folia incrassata. Capsula calyce obvie brevior.

D. *stricta* Clavaud in Act. Soc. Linn. Bordeaux, 1881, p. 386. Caules multum firmiores stricti minus nitidi leviter ramosi, internodiis abbreviatis. Sepala lanceolata. Capsula calyce obvie brevior.

Hab. Inverness-shire; on the top of Ben Nevis (*G. Don*, 1794). The example in Sowerby's herbarium (in Herb. Brit.), used for the figure of *S. maritima*, has Don's label attached, and it is here transcribed with the original spelling in the characteristic orthography of this remarkable botanist :—' *S. alpina*, this I believe to be a new species. I found it upon ben Nivis in Lochaber, this answers to the following description : foliis radicalibus linearibus, obtusis nitidis flore apetalo; this differs from the *apetala* in the radical leaves being broader and obtuse and [?] opening, and it is a considerable larger plant. I have cultivated this and *apetala* both for 2 years, and they remain permanently different. This is a cultivated speciment, but it is in no way different from the wild spe. in appairance; found in 1794.' In support of this identification, Messrs. Groves (Babington's *Manual*, ed. 9, p. 58) say that ' Fries states that his plant (*stricta*) sometimes occurs upon mountains in Norway; and G. Don seems to have found it on Ben Nevis.' D. Don states that his father, G. Don, found it still there in 1803, nine years after he first noticed it on the mountain. Smith says that ' G. Don sent the same from the summit of Ben Nevis in 1803. This example is in Smith's herbarium.

Syn.—*S. stricta a alpina* Fries, Nov. Fl. Suec. ed. 2, p. 58 (1828); *S. maritima* var. *alpina* Syme, Engl. Bot. ii. p. 177 (1864).

E. *ciliata* Nordstedt in *Hartman Skand.* Fl. ed. 11 p. 247 (1879). Griseo-glaucescens, parce glandulosa. Caules decumbentes. Folia apiculata, pilis glanduliferis minutis.

Hab. Cliffs at Boddin Point, 3 miles south of Montrose, on the coast of Angus.

This is the plant mentioned in *Bot. Exch. Club Rep.* 1914, p. 130, found growing on limestone by Mr. R. H. Corstorphine, in June, 1914. Specimens of a form of *S. maritima* from Afton bay, Alum bay, and Headon bay, in the Isle of Wight (*Miss C. E. Palmer*), and from Penmon in Anglesey (*G. C. Druce*), and in more diffuse form from Stonehaven, in Mearns, closely approach it in habit and in glandular condition.

The variety described by Nordstedt occurs in the amt of Bleking, in Sweden.

S. apetala crosses with *S. procumbens* and forms hybrids; and O. Kuntze (*Fl. Leipzigs*, 1867, p. 225) has suggested whether *S. ciliata* may not be a result of such crossing.

S. SUBULATA Presl. Fl. Sicula, p. 158 (1826).

Perennis, dense cæspitosa, sæpius glanduloso-puberula. Rhizoma brunnescens in ramulos longos solutum, verticale, tenuiter tenereque fibrillosum, e collo cauliculos floriferos adscendentes et rosulas foliorum steriles edens. Caulis centralis ad rosulam sterilem reductus. Cauliculi laterales floriferi 5—12 ctim., sub rosula centrali egredientes. Folia subulata longe aristata; infima brunnescentia emarcida; inferiora recurvo-patentia, basi utrinque scariosa margineque ciliata; caulina breviora rigida, internodia æquantia vel breviora, subciliata. Pedunculi solitarii, terminales et laterales, recti filiformes visciduli, fructiferi usque ad 3 ctim. Flores laxe pseudo-cymosi, proterogyni. Sepala 2½ mm., ovalia, post anthesin suberecta, fructifera primum patentia dein capsulæ adpressa. Petala 2½ mm., vel sublongiora, ovato-rotunda. Stamina 10; filamenta 2½ mm. Capsula 3 mm., primum nutans, dein erecta. Semina granulata rugulosa, dorso leviter canaliculata, oris canaliculi nigro-circellatis.

Stat. Dry gravelly and sandy places, heaths, dry pastures, rocks, gravelly places near the sea, the peat-filled cracks and hollows of mountain-rocks, dry ditch-banks,—'a noticeable feature by the bare roadsides in heathy districts when the flowers are open' (*G. C. Druce*). Generally distributed, but more sparingly in the south of England, and local elsewhere. Ascends to 810 metres on the Grampians of Aberdeenshire (*Watson*); to 600 metres in Perthshire, on Ben Vrackie, in which county it is common on the trap-hills on the south-east side of the lowland area, and not rare on the conglomerate and slate rocks along the highland boundary (*F. B. White*, Flora, p. 85); to 690 metres in Kerry, on Mt. Brandon (*R. W. Scully*, Flora, 1916, p. 46); to 590 metres in Galway (*Cyb. Hib.* ed. 2, p. 59); and to 375 metres in W. Yorkshire, on the shingly sandy margin of the south side of Malham Tarn (*F. A. Lees*, Flora, p. 169),—though the plant is very rare in Yorkshire.

'The mode of growth in this and the other perennial species of *Sagina* is, first, the production of a rosette, from the lower leaves of which axillary stems are produced. These lateral stems in *S. procumbens* and *Linnæi* take root early, but in *S. subulata* and *nodosa*, not until a much later period. The lateral stems alone produce flowers which are in a terminal cyme. Besides this, they produce, later in the season, a bud towards the base of the flowering stem, which grows into the central barren rosette of the succeeding year. The rosette of the parent at last withers, and the lateral stems become separate plants, united together until set free by the decay of the connecting portion, which is superficial in *S. procumbens* and *Linnæi*, but shorter and generally buried in *S. subulata* and *nodosa*.' (*Syme*, Engl. Bot. ii. p. 123).

Syn.—*S. procumbens var. b* Linn., Sp. Plant. p. 185; *Spergula laricina* Lightfoot, Fl. Scotica, i. p. 244 (1777), *non* Linn. (1753), *i.e. Alsine laricina* Crantz, *nec* Wulfen (1788), *i.e. Spergula arvensis* Linn.; *Spergula subulata* Swartz in Vet. Acad. Handling. Stockholm, 1789, p. 45, t. 1, fig. 3; *Phaloë subulata* Dumort., Fl. Belgica, p. 110 (1827); *Alsine subulata* Jessen, Deutsch. Excurs. fl. p. 286 (1879).

S. SCOTICA G. C. Druce in Bot. Exch. Club Rep. 1911 vol. 3, p. 14, April, 1912).

A priore distinguenda: Rhizoma crassius. Caudiculus repens et radicans, adscendens. Folia brevius aristata. Pedunculi prælongi, glabri. Sepala elliptica. Petala conspicua, calycem subæquantia.

Syn.—*S. glabra* var. *scotica* G. C. Druce in New Phytologist, 194, p. 310.

On the Phyto-geographical excursion this plant was noticed on the lower slopes of Ben Lawers, Perthshire, by the large burn which descends from the Gentian rocks. It suggested a creeping form of *S. subulata*. The plants were in good quantity and in free flower 17 Aug., 1911; and they occurred at levels from 360 to

1050 metres. In Herb. Kew. and Herb. Brit. are several specimens (of *S. Linnæi* and *S. subulata*) marked by Mr. Druce as referable to this species (or ?subspecies). Mr. Ostenfeld was inclined to refer the plants to a hybrid of *S. Linnæi* × *procumbens*. A point in favour of this,as in hybrids frequently, is that the plants were commoner than either of the assumed parents. At about 1000 metres on Ben Lawers it was in full flower, when *S. Linnæi* was well over. It seems rather widely spread in the Highlands, according to the localities given by Mr. Druce, which are classified under counties from his *data*.

Hab. *Perthshire*—Ben Lawers (*Brown*, 1794, in Herb. Brit., 'Spergula subulata'); Craig Chailleach and Glas Thulachan, 1912; Stuich-an-Lochan (*Syme*, 'Sagina subulata'). *Angus*—mountains of Clova, 1912; Glen Dole, 1913; Glen Phee, 1915. Caenlschen, *Aberdeenshire*—Callater, 1912. Inverness-shire—Stob-Coire-an-Easain-Mhor, 1912 (*W. A. Shoolbred*, 'Sagina Linnæi'); Glen Ennich, 1912. Braeriach, *Argyllshire*—Ben Lui, 1913. Glen Aan, *Banff*.

Mr. Druce tells me that this is the common *Sagina* above 840 metres on the Scottish hills. And, moreover, it would be interesting to find it where *Linnæi* is not within hail.

S. LINNÆI Presl. Pel. Haenk. ii. p. 14 (1831).

Perennis, glabra. Rhizoma ramosum. Cauliculi laterales multi tenues debiles, prostrati dein apicem versus geniculato-adscendentes, sub rosula centrali sterili prodeuntes. Folia fere plana, rosularum elongato-linearia, caulina linearia internodia æquantia vel breviora, omnia mucronata. Pedunculi solitarii filiformes, terminales et laterales, deflorati apice nutantes, fructiferi erecti internodio proximo vix duplo longiores. Sepala 2 mm., ovato-oblonga, fructifera capsulæ adpressa. Petala oblonga, calyce paullo breviora. Stamina 10, petalis vix longiora, antheræ flavicantes. Styli erecti. Capsula 3—3½ mm. Semina ferruginea, dorso leviter canaliculata.

Stat. In the Scottish Highlands, on rocks and wet banks of mountains; in Perthshire, Angus, Aberdeenshire, Banffshire, Inverness-shire, Argyllshire, Ross-shire, and Shetland (*Beeby*). Ascends to 1200 metres in Perthshire, on the summit of Ben Lawers, in the Breadalbane district (*F. B. White*, Flora, p. 86; and *Brown*, 1794, in Herb. Brit., 'at great heights even near the summit of Ben Lawers'); between 945 to 1022 metres on Ben Lawers (*J. H. Balfour*, 1864, and (*E. S. Marshall*, 1887, in Herb. Brit.); to 1070 metres on Ben Ein (*W. R. Brunton*, 1864, and *E. S. Marshall*, 1887, in Herb. Brit.); corrie near the summit of Stob-Coire-an-Easain-Mhor above Loch Triag, in Inverness-shire (ex herb. *J. H. Morgan*, 1891, in Herb. Brit.); to 1006 metres on the Grampians of Aberdeenshire (*G. C. Druce* in Ann. Scot. Nat. Hist. 1900, p. 168). *Perthshire.* Common in the Breadalbane district, on grassy alpine slopes, rare elsewhere. The earliest specimen I have seen is an example from Meall Ghoardie (*G. Don, Dawson Turner*, 1789, in Herb. Kew.). This is the find mentioned by Hooker, *Fl. Scotica*, p. 145 (1821); and incidentally referred to by Smith, *Engl. Bot.* t. 2105 (Jan. 1810),—'Received from the late Mr. J. Mackay, who gathered it on Ben Lawers in 1794; Mr. G. Don appears to have found it previously on Malghydy.' It was first recorded as a British plant by Smith, *Fl. Britannica*, ii. p. 504 (1800);—'on Ben Lawers, where it was discovered by Mr. J. Mackay in 1794.'

Smith, *Engl. Flora*, ii. p. 339 (1824), gives a good description of the plant under the Linnean name of *Spergula saginoides*, but seems to have had his doubts about the right genus. He says,—'This is altogether a *Sagina* in habit, very much resembling the common *procumbens*; but without adverting to number or size, the structure of each part, carefully examined shows sufficient differences.' Scandinavian specimens seem to have more frequently five stamens instead of ten.

B. *nivalis* (Hook. Stud. Fl. Brit. Islds. p. 66, 1884, as subspecies).

In cæspitibus parvis densis. Cauliculi nani, circiter 30 mm., laterales atque centralis adscendentes ramosi. Folia basalia vix rosularia. Pedunculi cum floribus omnino recti.

Stat. Bare places on alpine ridges in Perthshire and Argyllshire. First recorded as a British plant (from Ben Lawers) by Watson, in Journ. Bot. 1863, p. 355. The same thing was apparently gathered there by R. K. Greville before 1840 (see *Trans. Proc. Bot. Soc. Edinburgh*, xiii. p. 95). Ascends to 1200 metres near the summit of Ben Lawers (*l.c.* xxi. 1898, p. 104). In Perthshire found also on Am Binnein, Craig-na-Caillich, and Cam Chreag (*F. B. White*, Flora, p. 86), also more recently on a small hill north-east of Ben Lawers (*M. Cowan*, 1910, n. 66, ex Bot. Exch. Club Rep. 1911, p. 76). Also on Ben Lawers (*Hooker*, 1864, in Herb Kew.), and up to 1000 metres (*P. Ewing*, 1901, in litt.).

Watson wrote, ' Syme has shown to me a specimen of this Arctic plant picked on Ben Lawers several years ago by Professor Balfour.' It is still another instance of the extreme botanical interest of this famous Scottish mountain. Balfour's specimens are dated 1847.

Syn.—*Spergula saginoides* var. *nivalis* Lindblom in Physiogr. Sallsk. Tidskr. p. 328 (1837-38); *Sagina intermedia* Fenzl in Ledeb. Fl. Rossica, i. p. 339 (1842), (ex Gürke, Pl. Europææ, ii. fasc. 2, p. 240 [Jan. 1899]); *Sagina nivalis* Fries, Nov. Fl. Suecic. Mant. iii. p. 31, *ex parte* (1842); *S. nivalis* var. *laxa* Lindblom in Bot. Not. 1845, p. 66; *S. nivalis* auctt. scot.

c. BOYDII nobis.

Pulvinata. Cauliculi nani structi. Flores apetali. Sepala nunquam patentia.

Hab. Aberdeenshire; on Ben A'an, a hill in the deer forest of Invercauld, somewhat difficult of access.

Judging from the specimens in Herb. Kew., which form dense hard cushions, it has the habit of the alpine var. *nivalis*, and seems to come well under *S. Linnæi* rather than under *S. procumbens,* of which it has been suggested to be a form.

The plant may possibly be a *lusus.* The discoverer had the plant in cultivation, but it never produced fertile seed, and it was multiplied by division. Its peculiar ovary is described as ' globose, flattened at the apex, which is covered by a cluster of about 11 or 12 semi-globular shining pale yellow papillæ, round which cluster is a slightly thickened rim (with 5 or 4 points and 5 or 4 angles) round the flattened apex.'

Syn.—*S. Boydii* White in Trans. Bot. Soc. Edinburgh, 1887, p. 32. The plant was found while exploring the Braemar district in 1878, but the exact station was not remembered, nor has subsequent search been successful. Like the herbarium specimens, the figure shows the plant to be quite different both in appearance and in habit from *S. procumbens*, and from which it differs in several salient characters.

S. NODOSA Fenzl. Vers. Darst. Verbr. d. Alsineen, tab. synopt. ad p. 18 (1833).

In cæspitibus parvis laxis, perennis, glabra vel superne glanduloso-puberula. Rhizoma parce ramosum. Cauliculi laterales 1—2½ dcm., sub rosula centrali egredientes et circulo patiti, dein curvati adscendentes simplices vel superne di-trichtomi, ob axillas foliorum fasciculigeras eximie nodosi, caule primario aut centrali ad rosulam foliorum sterilem reducto. Folia subulata obtusa, mutica vel submucronulata; rosularum late vaginantia, 12 mm., caulina 3—6 mm. Dichasium reductum, 1—3 florum. Pedunculi terminales vel pseudo-axillares, fructiferi erecti, internodio proximo subduplo longiores. Flores 6 mm. diam., breviter pedunculati. Sepala 4 mm., ovalia concava. Petala 9 mm., obovata. Andrœcium diplomerum. Capsula 5 mm. Semina obovoideo-rotunda, distincte tuberculata, dorso vix canaliculata. (*Knotted Spurrey*).

Stat. Damp sandy places, on heaths, meadows, and commons, and in peat pits, marshes, and in the slacks of sand-dunes, from Sark (*E. D. Marquand*, Fl. Guernsey, p.) northward to Shetland (*R. Tate*, 1865 Herb. Brit., and herb. Watson). Ascends to 540 metres in Northumberland, in W. Allendale (*Baker and Tate*, Flora, p. 137); to 500 metres in Westmoreland, by springs between Shap Fell and Kendall Fell (*J. G. Baker*, Fl. Engl. Lake District, p. 48); to 450 metres in W. Yorkshire, on Malham Tarn shingle (*F. A. Lees*, Flora, p. 169); to 420 metres in Perthshire (*F. B. White*, Flora, p. 85); and to 375 metres in Dublin, on Seecawn Hill (*N. Colgan*, Flora, p. 40).

No longer found in Jersey since most of the St. Ouen's Pond hollows have been filled up.

The glandular and glabrous forms are not separable as varieties, the former being usually a plant of maritime stations. Var. *simplex* Graebn. (1895) is a reduced form with simple stems, and var. *ramosissima* Wohlfarth (1890), is an extreme form with the lateral stems much branched: both are frequently met with.

B. MONILIFORMIS Lange.

Stat. Widely distributed from Dorset northward to Sutherland,

and from Norfolk westward to Clare (*G. C. Druce*). On Annacoona, Sligo, Mr. Druce saw it as high as 540 metres, *i.e.* at a greater altitude than the type in England.

The life-history of the species in the Lancashire dunes is discussed in a paper in *Journ Bot.* 1911, p. 270, by W. G. Travis, where it is shown that this variety is a condition in which the plant reproduces itself by leaf-bulbils which develop in the leaf-axils of the lateral stems, especially when the plant grows in wind-swept places. Therefore it may be looked for in sandy places on the coast.

Gay (in *Kew. MSS. ined.*) says that the successive pairs of leaves are not actually decussate, but disposed in a weak spiral (cf. *Braun* in Flora, 1843, p. 387). This seems to me to indicate a transition stage in the direction of the aberrant type of Caryophyllaceæ exemplified in *Telephium*; which, in its free styles, seems to be more nearly allied to the Spergularieæ than it is to the Polycarpeæ in which the styles are united below, in spite of the presence of stipulate leaves in the Spergularieæ.

It is to be regretted that owing to a misunderstanding the above valuable Monograph was printed before an opportunity was given to Dr Williams to correct the proof. There are, unfortunately, many typographical errors. The most important corrections to be noted are :—

p. 190, line 16—For "Clavand" read "Clàvaud."
p. 191, line 10—For "Europaeae" read "Europeae."
p. 191, line 15—For "Foucard" read "Foucaud."
p. 191, line 19, et seq.—For "Fanfani" read "Tanfani."
p. 191, line 37, et seq.—For "En." read "Eu."
p. 192, line 10—For "petalia" read "petala."
p. 193, line 34—For "Machdin" read "MacDhui."
p. 194, line 36—For "ciliati" read "ciliata."
p. 195, line 11—For "subsaequans" read "subaequans."
p. 196, line 24—For "subaequens" read "subaequans."
p. 196, line 29, et seq.—For "internodius" read "internodiis."
p. 200, line 14—For "Caenlschen" read "Caenlochen."
p. 202, line 18—For "structi" read "stricti."

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REPORT FOR 1917

OF THE

BOTANICAL EXCHANGE CLUB

(CONVENIENTLY ABBREVIATED REP. B.E.C.)

BY THE

EDITOR AND DISTRIBUTOR,

C. E. BRITTON.

VOL. V. PART II.

PUBLISHED BY
T. BUNCLE & CO., MARKET PLACE, ARBROATH.

October 1918.

PRICE 3s 6d.

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Robinson, Fred.	409
Roper, Miss Ida, *F.L.S.*	234
Salmon, C. E., *F.L.S.*	59
Travis, W. G.	15
Waterfall, Charles, *F.L.S.*	618
Wade, A. E.	36
Waddell, Rev. C. H.	72
Webster, Alfred	72
Wheldon, J. A., *F.L.S.*	139
White, J. W., *F.L.S.*	254
Wilson, A., *F.L.S.*, *F.R.Met.S.*	102
Total,	6222

Thalictrum flavum L., (*a*) *sphærocarpum* Lej. & Court. Mow Fen, Shouldham, Norfolk W., v.-c. 28, July 27, 1917.—J. E. Little. "In these specimens the fruits are infected with a gall and thus give the swollen appearance. I should not call it var. *sphærospermum*." Druce.

T. minus L. Hedge-bank on ascent of Pyder Mountain, near Glanwydden, Llandudno, Carnarvonshire, July 7, 1917.—C. Waterfall. "Leaflets deeply cut, more or less glandular-hairy on both sides, as are the petioles. In these and other characters it seems to agree rather well with the description of *T. odoratum* Gren. and Godr. Fl. de France i. 6, 1848. It may also be *T. minus*, var. *glandulosum* Koch Synopsis ed. ii. 1, 1843. The stem is finely glandular as seen under a strong lens."—Marshall.

Ranunculus acris L., var. Waste ground, Walton, Lancs S., June 15, 1916.—J. A. Wheldon. "Under *R. Boræanus* Jord. I think that it may be referred to *R. tomophyllus* Jord."—Marshall. "Is it not *R. Boræanus* Jord.?"—Druce.

R. Lingua L. Ditches on Formby Moss, Lancs. S., July 14, 1917.—C. Waterfall. "Yes, the narrow-leaved plant."—Druce.

R. heterophyllus Weber. Pool near Kemble, v.-c. 34, June 1912.—W. J. Greenwood. "This is Mr Groves' final decision though at first he wrote, 'But for the densely hairy carpels I should have thought *R. Drouetii*, var. *Godronii*.' In later gathered specimens these hairs have mostly dropped."—Riddelsdell. "Yes, just the plant figured in Syme *E.B.* ed. iii. as *R. heterophyllus* Bab. It seems to me a good species, distinct from all forms of *R. peltatus*."—Marshall. "A weak small-flowered form."—Groves. "Yes, a small form."—Druce. "*R. Godronii* Gren."—Hiern.

Ranunculus ——? [7]. Dyke, St Osyth Marshes, Essex N., April 28, 1912. The carpels of the few fruiting specimens sent appear to bring this under *R. Baudotii*, and I should suggest the var. *marinus* Arrh. & Fries.—G. C. Brown. "Apparently *R. salsuginosus* Pall."—Hiern. "I should say *R. heterophyllus*, var. *submersus*, a very characteristic plant of salt marshes. The carpels are bristly, not glabrous as in *R. Baudotii*, and the peduncles are short: whereas in *Baudotii* they are conspicuously long, often with a double curve."—Groves.

R. sphærospermus Hiern. Ampney St Peter, v.-c. 33, May 30, 1915.—W. J. Greenwood. "Determined by Mr J. Groves."—Riddelsdell. "*R. sphærospermus* Boiss. & Blanche."—Hiern.

R. hederaceus L., f. Near Lyndhurst, Hants S. This semi-floating form has in Britain usually been referred to *omiophyllus* Tenore (cf. Bab. *Man.* 10) but the claims of *omiophyllus* Ten. (*coenosus* Guss.) to replace *Lenormandi* have been urged by Dr Moss. In that case the floating form may be called forma *natans*, for the distinctions have scarcely varietal value.—G. C. DRUCE. "*R. omiophyllus* Ten."—HIERN.

Papaver hybridum L. Near Wilstone, Wilts, July 1917.—G. C. DRUCE and Hon. S. TENNANT.

Meconopsis cambrica Vig. Quite established and has been so for many years at Meole Brace, Shrewsbury, Shropshire, July 1917.—J. COSMO MELVILL.

Fumaria Bastardi Bor. Bangor, Carnarvonshire, August 1917.—G. C. DRUCE.

F. Vaillantii Lois. Stow Bardolph Hall, Norfolk W., v.-c. 28, July 23, 1917. All the sheets from the same plant. Leaf segments flat. Not recorded for Norfolk in Nicholson's *Flora*.—J. E. LITTLE.

Matthiola incana Br. Cliffs near Freshwater, Isle of Wight, May 20, 1892.—Coll. J. H. A. STEUART; comm. J. A. WHELDON.

Radicula Nasturtium, var. *siifolia* Druce. Ewelme, Oxon, June 1917.—G. C. DRUCE.

R. palustris Moench. Whyke gravel pit, Chichester, June 6, 1917.—R. J. BURDON. "A form with narrower, less turgid silicules than usual."—BRITTON.

Barbarea ——? Hedge-bank, Rocklands, v.-c. 28, June 7, 1917.—F. ROBINSON. "Past flower and only in young fruit. Certainly under *B. vulgaris* (aggregate); it may be var. *arcuata* Fr. (*B. arcuata* Reichb.) as the pods are spreading and curved, but seems too immature for certainty."—MARSHALL.

B. arcuata Reichb. Alien. Walton, Lancs. S., v.-c. 59, July 15, 1917.—J. A. WHELDON. "This is *B. vulgaris*, var. *arcuata* Fr., not specifically distinct from *B. vulgaris*. 'A smaller specimen from same locality is rather poor material, but probably comes under the plant I call *B. vulgaris*, var *arcuata*, subvar. *brachycarpa*.' See *Journ. Bot.* 207, 1917."—JACKSON.

B. intermedia Bor. Weed in garden, Grey Abbey, Co. Down, June 1917.—C. H. WADDELL. "Correct. Easily distinguished from *vulgaris* when in fruit by the shorter style of the pods; when in flower, by the more deeply divided stem leaves which have narrower segments, and by the paler colour of the flowers. I regard this as a colonist in England, as nearly all the specimens I have seen are from cultivated ground and it is often found in clover fields."—JACKSON.

Arabis hirsuta Scop., forma. Heath land, Stow Bedon, v.-c. 28, June 1917.—F. ROBINSON. "Why 'forma'? It looks to me the ordinary state of *A. hirsuta*. It would be much more interesting if collectors would state on the label in what way the growing plant differed from type, when a variation is indicated."—SALMON.

A. petræa Lam., var. *grandiflora* Druce. Ben Laoigh, Perthshire, July 30, 1917.—R. J. BURDON. "Yes, which does not agree with description of *ambigua* Fries (*Mantissa* iii., 71)."—DRUCE.

Cardamine bulbifera Crantz. Near Kingsfold Farm, Rusper, Sussex, May 21, 1917.—R. J. BURDON. "No flowers, but a few of the characteristic, rarely ripening pods."—PEARSALL.

Alyssum incanum L. Ship Docks, King's Lynn, v.-c. 28, July 24, 1917.—F. ROBINSON. "Yes, excellent specimen. Thellung put it to *Berteroa*."—DRUCE.

A. maritimum Lam. Limestone rocks on coast near the West Shore, Llandudno, Carnarvonshire, October 16, 1916.— C. WATERFALL.

Cochlearia anglica L. Chichester Harbour, Sussex, May 12 1917.—R. J. BURDON. "No radical leaves; immature pods; an unusual form."—PEARSALL.

Sisymbrium orientale L., var. Waste ground, Billingshurst, Sussex, July 23, 1917.—A. WEBSTER.

Sisymbrium ——? Ship Docks, King's Lynn, v.-c. 28, July 24, 1917. All specimens taken from one large spreading plant that smelt atrociously when drying. *Rapistrum* in young state.—F. ROBINSON. "Is *Rapistrum perenne* All."—THELLUNG.

Diplotaxis tenuifolia DC. Ship Docks, King's Lynn, v.-c. 28 July 24, 1917.—F. ROBINSON. "Correct."—RIDDELSDELL and DRUCE.

D. tenuifolia DC. Edge of footpath, Llandudno, Carnarvonshire, October 1916.—C. WATERFALL. "No. *D. muralis* DC., var. *Babingtonii*."—RIDDELSDELL, BRITTON and DRUCE.

Capsella Bursa-pastoris Moench. Cultivated land, Watton, Norfolk, June 20, 1917.—F. Robinson. "Mott's *stenocarpa-lyrata*." Pearsall. "A very interesting uniform series, which I would refer to var. *stenocarpa-lyrata* Mott. Mr Robinson's plant, with radical leaves not more than pinnatifid, is decidedly less common than a related form with pinnatipartite radical leaves and a similarly narrow capsule quite as much attenuate at the base, which must be placed to Mott's var. *stenocarpa-coronopifolia*. The capsule of Mr Robinson's Shepherd's Purse is narrowly cuneate, with the notch very shallow or almost absent. In these characters it somewhat differs from var. *stenocarpa-lyrata* in which the capsules are deeper notched, elongate-obovate with, of course, the lateral margins distinctly curved; whereas in Mr Robinson's plant the sides of the capsules are almost straight."—Britton.

C. Bursa-pastoris Moench, var. *stenocarpa-lyrata* Mott. Dalton-in-Furness, Lancs.—W. H. Pearsall. "Yes, a form with broader capsules than Mr Robinson's plant."—Britton.

Lepidium latifolium L. St Philip's Marsh, Bristol, Glostei W., May 14, 1903.—J. W. White.

L. heterophyllum Benth., var. *papillosum* (Dunn). [298]. About Coombe Farm, near Brendon, Devon N., v.-c. 4, October 1, 1917. The pods are distinctly papillose, but this is a slight character.—W. C. Barton. "Form or sub-variety seems quite a high enough rank."—Marshall. "Yes."—Thellung.

? *Myagrum perfoliatum*. Garden weed, Dalton-in-Furness, v.-c. 69b, August 9, 1917.—D. Lumb. "Characteristic examples of this species."—Britton. "Yes, beautiful specimens."—Druce and Thellung.

Rapistrum perenne Bergeret. Waste ground near Helsby Stn., Cheshire, August 4, 1915.—C. Waterfall. "Yes. Nice fruit, showing the wartless ridges."—Wheldon, Thellung, and Druce.

Raphanus Raphanistrum L. Wheat-field, Foulden, v.-c. 28, June 16, 1917.—F. Robinson. "All examples sent belonged to the yellow-flowered form."—Britton. "Yes, var. *flavum* (Gray 1821) Druce Fl. Berks 70. This comes true from seed as does the yellow variety of *R. maritimus*. Rouy and Fouc. ii., 66, 1895, made it a sub-var. *sulfurea* but under *R. silvestre* Lam., rejecting the Linnean trivial because it is tautological!"—Druce.

Viola sylvestris Kit., var. *punctata* Druce. From various localities in Tidenham parish, v.-c. 34, and Condicote, v.-c. 33, May

1917. Mostly seen and approved by Mrs Gregory.—H. J. RIDDELSDELL.

V. silvestris × *V. silvestris*, var. *punctata* (det. E. S. Gregory). Wymondley Road, Hitchin, Herts, v.-c. 20, May 6, and June 3, 1917. —J. E. LITTLE.

V. Riviniana Reichb., var. *diversa* Gregory. All seen and named by Mrs Gregory. Parish of Tidenham, v.-c. 34, May 1917. It has been found also in several places in v.-c. 33.—H. J. RIDDELSDELL.

V. canina L., var. *ericetorum* Schrad. Amongst gorse, Scanning Common, v.-c. 28, May 12, 1917. See *Rep. B.E.C.* 326 ,1915.— F. ROBINSON.

V. lactea × < *Riviniana*. Sandhills near Rock St Enodock, Cornwall, v.-c. 1, May 23, 1916.—J. W. WHITE. "Yes, nearer to *V. Riviniana* in flowers, intermediate in leaves."—MARSHALL. "A capital set of *V. lactea* × < *Riviniana* violets. Colour of flowers when fresh the darker blue of *V. Riviniana*, and calyx appendages not only lobed but *frilled*. The small, rounded, lowest leaves (not present in all the specimens) and long, slender peduncles point to the joint parentage of *V. lactea*."—GREGORY.

V. hirta L., var. *propera* Jord. On oolite pasture, Wick, Gloster W., v.-c. 34, April 18 and June 26, 1917.—IDA M. ROPER. "The small leaves and large flowers suggest var. *propera* of *V. hirta*. Sepals should be broad."—GREGORY.

V. lepida Jord. Lampeter, v.-c. 46, June 24, 1913. All sheets seen and named by Dr Drabble.—RIDDELSDELL. "Good shoots but no roots. Flowers short stalked; lower petal not sufficiently large and truncate. My specimen seems to be *Lejeunii*."—LUMB. "From the single specimen submitted to me I cannot name this pansy."—DRABBLE.

V. Lejeunii Jord. Low Wood, Haverthwaite, v.-c. 69b, September 15, 1917.—W. H. PEARSALL. "The specimen sent to me was *Lloydii*. It has the broad sepals and broad leaves characteristic of *Lloydii*."—DRABBLE.

V. variata Jord., var. *sulphurea* Drabble. Sandy ground, Wigginton Heath, April 23, 1915. All sheets seen and named by Dr Drabble.—H. J. RIDDELSDELL.

V. Lloydii Jord. Llandaff, v.-c. 41, July 19, 1913.—H. J. RIDDLESDELL. "A very beautiful specimen of the pale-flowered form of *Lloydii*."—DRABBLE.

V. arvensis Murr., var. *agrestis* (Jord.). Cultivated field, Barrow Hill, Potters Marston, Leicester.—A. E. Wade. "*V. ruralis* Jord. It is rather up-drawn but the form of the stipules, and the basal branching are quite characteristic."—Drabble.

V. arvensis Murr., var. *obtusifolia* (Jord.). Cultivated ground, Shipham, Som. N., v.-c. 6, June 20, 1917.—Ida M. Roper. "Yes." —Drabble.

V. nana Godr. Lancresse Common, Guernsey, April 1913.—C. V. B. Marquand. "Yes."—Drabble.

V. Curtisii E. Forst., forma. Sand dunes near Birkdale, Lancs. S., v.-c. 59, June 11, 1916.—W. G. Travis and J. A. Wheldon. "Var. *Pesneaui* (E. G. Baker)."—Drabble.

Dianthus Armeria L. Cult., Polperro, July 18, 1917. Seed from Hayle, v.-c. 1.—F. Rilstone.

Silene maritima With., ? var. *parvifolia* Druce. Walney Island, v.-c. 69b.—D. Lumb. "Matches the plant of Loe Bar, Cornwall W. (Mr Druce's original station) very well; but I believe it to be only a state due to exposure and poor sandy soil."—Marshall. "Very nearly *parvifolia* under which it may be put, but the leaves are nearly twice as long as the Looe specimens, which also occurred at Southsea, Hants."—Druce.

S. noctiflora L. Oatfield, Tydyn-y-gwynt, Rhyd-y-newyn, Flintshire, August 19, 1916.—C. Waterfall.

Lychnis Flos-cuculi L. Ewelme, Oxon, June 1917. In *Rep. B.E.C.* 105, 1916, I drew attention to the red-veined and green-veined calyx forms of this species. This is the type with the red veins.—G. C. Druce.

Cerastium pumilum Curt. In three places on the Downs between Worth Matravers and Dancing Ledge, Dorset, May 1917. In the *Flora of Dorset* it is given on the Rev. W. W. Newbould's authority, but without locality. Mr C. B. Green has also sent me specimens gathered by him from Swanage Quarries. It is included in *Top. Bot.* on the authority of Pleydell *Cat.*, but oddly its editor, on whose authority it rested, did not mark it as having been seen by him.— G. C. Druce.

Arenaria serpyllifolia L., var. *viscidula* Roth. [299]. Rough hilly pasture near Brendon, Devon N., v.-c. 4, September 1, 1917. In some specimens the branches are long and slender, but the capsules are all ovoid and brittle. The distinction between *serpyllifolia* and *leptoclados* seems somewhat slight to justify separation as species.—W. C. Barton. "Yes, in a rather slender form with a different habit from our maritime states of it. It certainly resembles *A. leptoclados* in the smaller capsules and gracile habit, but it has not the leptodermous capsules of this latter."—Wheldon. "These are *A. leptoclados* Guss., var. *viscidula* Rouy & Foucaud. Opinions differ as to the specific rank of *A. leptoclados*: personally, I incline to keep it separate."—Marshall.

Sagina ——. Weed on garden paths, Wigginton, v.-c. 23. Keeping very distinct in colour from *S. procumbens* which grew with it. It is dark sage-green and very hairy; the hairs on leaves are long and eglandular; shorter and glandular on peduncles. It is not absolutely prostrate in habit, at any rate on the less trodden and softer edges of the paths. I suppose it is a hairy form of *S. apetala*. The abnormal season is not responsible for extra hairiness, for it was here in 1916.—H. J. Riddelsdell. "Apparently a weak state of *S. apetala*, var. *prostrata* Bab."—Marshall. "I should call this *apetala*, glandular in a ± common way."—Lumb. "*S. apetala*."—Pearsall. "*S. ciliata*, var. *ambigua* Corb. My idea is that Corbière's plant is a cross between *S. ciliata* and *S. procumbens*, which results in a procumbens-like plant with the clothing of *S. ciliata*."—Wheldon. "I should call these *S. apetala*, var *barbata* (Fenzl)."—Salmon.

Sagina ——? [57, Pearsall] and [58, Lumb]. Abbey Road near Furness Abbey, v.-c. 69b, July 16 and August 27, 1917.—W. H. Pearsall and D. Lumb. Mr Pearsall first gathered this plant, the actual specimens being glabrous. We have both been anxious to see glabrous *apetala* and hurriedly concluded this must be it. Further study however made us waver, and others have wavered about it. It grows on a red-sandstone wall, mostly from cushions of moss on it. Along the bottom of the wall grows *apetala* from which it could not be distinguished, i.e., growing, by simply looking for the maltese-cross sepals. Both plants showed many of these spreading sepals, a feature which has nearly disappeared from the pressed plants. In other particulars the plants were markedly different. The "book" characters of *maritima* are fairly evident, but where, in this district, *maritima* is found the plants are very very few indeed; it would be a task to gather a representative sheet. They bear no resemblance to these.—D. Lumb. "Remarkably upright with erect or erect-patent branches and very few glands. I can find no difference between Nos. 57 and 58, which seem to come under var. *imberbis* Fenzl, as defined by Rouy & Foucaud *Fl. de France* iii. 288."—Marshall. "*S. maritima*, var. *elongata* G. & G. (*S. debilis* Jord.). Mr Lumb's sheet contains a slight admixture of *S. apetala*."—Wheldon. "[58]. This is, in the bulk, *S. maritima* and would come under the ± stiff erect state which I call f. *stricta* (Fr.). I say "in the bulk" because, on my sheet, I see one plant which is undoubtedly not *maritima*. Mr Lumb will perhaps investigate this as the solitary example seems to be either *S. apetala* or *S. Reuteri*. [57]. The same remarks made upon [58] apply here, with the exception that on my sheet it is all *S. maritima*."—SALMON. "[57]. Yes, coming under var. *imberbis* (Fenzl) rather than var. *barbata* (Fenzl). Beautiful examples."—SALMON. "[57]. This is *S. maritima*. [58]. A mixed gathering—*S. apetala* and *S. maritima*."—TRAVIS.

S. maritima Don, f. *stricta* (Fries). Anglesey, close to Holyhead Station, June 23, 1916. The majority of the plants in this gathering were much more erect and apetala-like in habit than the normal more-or-less spreading-ascending plants of our coasts, and I thought they might come under the *stricta* of Fries. This author (*Nov. Fl. Suec.* ed. ii., 58, 1828) segregates his plant into α. *alpina* and β. *maritima*, and whilst the description of his aggregate *S. stricta* satisfactorily defines this Holyhead plant, he quotes the *English Botany* plate, f. 2195, for *maritima*, which is not very happily included under the *stricta* diagnosis. There is thus a slight confusion of names. Grenier and Godron (*Fl. Fr.* i. 246, 1848) evidently use the name *stricta* for a different plant having sepals "lancéolés-subaigus"; Fries (*l.c.*), on the other hand, mentions the characters "calyce obtuso" and "foliola calycina ovata, concava, obtusa, obsolete nervosa." Lloyd (*Fl. de l'Ouest Fr.* 57, 1898) distinguished the two forms of *maritima* under discussion but did not give them names. He says: "Dans les lieux ras cette plante est plus ou moins couchée, à tiges et pédoncules ascendants et ayant au milieu une rosette de feuilles. Dans les lieux herbeux, la tige est dressée ainsi que le pédonc., et la rosette centrale manque." The first would be the *English Botany maritima*; the latter, forma *stricta*.—C. E. SALMON. "Yes, agrees much better than a plant I submitted from Lancs. W. and referred to this by Mr Druce (vide *Report* 1906). These plants I should now call var. *elongata* G. & G."—WHELDON.

Spergularia rupestris Lebel. Manghold Head, Isle of Man, August 7, 1917.—J. A. WHELDON.

Polycarpon tetraphyllum L. St Andrews, Guernsey, April 1913. —C. V. B. MARQUAND.

Claytonia perfoliata Donn. Waste ground, Formby Moss, Lancs. S., July 14, 1917.—C. WATERFALL.

Montia fontana L., subsp. *minor* Gmel., var. *intermedia* Beeby. Rill below County Gate, Devon N., v.-c. 4, September 15, 1917.—W.

C. Barton. "Yes, rightly determined, but in the *Camb. Fl.*, the parturition of which has been so long delayed, I treat *M. fontana* L. (*lamprosperma*) and *M. verna* Neck. as two distinct species: under the latter var. *intermedia* (Beeby) is placed. This occurs in the uplands of Devon and in Ireland."—Druce.

Hypericum undulatum Schousb. Marshes near Perranporth, v.-c. 1, September 2, 1916.—F. Rilstone.

Malva sylvestris L., f. *alba*. Iffley, Oxford, June 1917.—G. C. Druce.

Malva —— ? [451]. Wytham, Berks, August 1917. *M. pusilla* With., which has persisted there for some years.—G. C. Druce. Agreed to by Thellung.

M. pusilla Sm. [1876]. Cultivated field, Chessington, Surrey, August 12, 1917. Plentiful.—C. E. Britton.

Linum catharticum L., f. *dunensis*. Braunton Burrows, Devon N., July 1917.—Coll. C. P. Hurst. See *Report* 1917. Comm. G. C. Druce.

Geranium sylvaticum L. Wood on high ground, Sporle, v.-c. 28, June 9, 1917.—F. Robinson. "In the *Flora of Norfolk* it is said to be not indigenous."—Druce.

G. Robertianum L. [294]. Wall at Oare, Somerset S., v.-c. 5, September 4, 1917. All from one very large plant with a distinct look, but I can find no tangible character to separate it from type. Many plants in the district answered to the description of var. *rubricaule* Hornem. which seems to me no more than a form of exposed situations.—W. C. Barton. "Under type, I should say. My series of var. *rubricaule* named by Dr Moss, both from the coast and from inland stations, is characterised by a shorter, more compact habit, glabrous or glabrescent calyces, more finely divided leaves and small petals, their limb not exceeding the claw."—Marshall.

Erodium bipinnatum Willd., var. *sabulicolum* Lange, a form approaching *E. Lebelii* Jord? Maritime sands, Point of Ayre, Isle of Man, August 6, 1917.—H. J. & J. A. Wheldon. "This seems to agree with Dumortier's description of his *E. glutinosum*. We have dissected the solitary flower on our example of Mr Wheldon's plant and the filament character is not that of either *E. bipinnatum* or *E. sabulicolum*."—Salmon.

Oxalis corniculata L. Weed in nursery ground, Ledbury, Hereford, v.-c. 36, August 17, 1917.—S. H. Bickham. "On my sheet there are two very different plants; one (diffuse, 1-3 flowered) appears to be luxuriant *O. corniculata*, (*a.*) *genuina* Rouy; the other has leaves twice as large, a very different manner of growth, branching from near the base. with remarkably long lower peduncles (up to 6 in. or more); flowers many (up to nine) in terminal umbels. This comes nearer to *O. stricta* L., but I do not think it can belong to that."—MARSHALL.

Oxalis ——? A persistent garden weed, Ledbury, Hereford, v.-c. 36, July 18, 1917.—S. H. BICKHAM. "*O. corniculata* L. approaching var. *minor* Lange."—THELLUNG.

Ilex Aquifolium L. Seedlings. New Forest, near Lyndhurst. Hants, v.-c. 11, May 24, 1917.—W. C. BARTON.

Acer campestre L., forma. Wootton, Berks, September 1916.—G. C. DRUCE. "*Acer campestre* L."—HENRY.

Genista pilosa L. Exposed downs above cliffs near Perranporth, v.-c. 1. In fruit. Examples which show well the characteristic twiggy growth of the plant. On these wind-swept downs it grows densely matted with heather (*Erica cinerea*) and dwarfed furze.—F. RILSTONE.

Spartium junceum L. Abundant on steep railway cutting at Ledbury, June 19, 1917.—S. H. BICKHAM.

Ulex Gallii Planch. Lane-side on descent of Moel Fama, Flintshire, August 30, 1916.—C. WATERFALL. "Yes, but very weak and short-spined; this may be due to shade. It agrees well in appearance with one sheet from Cornwall (collected by Davey) of var. *humilis*."—MARSHALL.

Ononis procurrens Wallr. = *O. spinosa* L., var. *mitis* L. Clay banks, shore of Dee estuary, Dawpool, Cheshire, v.-c. 58, August 18, 1917.—W. G. TRAVIS.

O. maritima Dum. Sandy ground, Point of Ayre, Isle of Man, August 6, 1917.—H. J. & J. A. WHELDON.

Medicago Falcata L. Kingston-on-Sea, Sussex, August 10, 1917.—A. WEBSTER. "Right, I believe, but very small. The size of the flowers varies greatly in my specimens from native stations."—MARSHALL.

M. Falcata L., var. *tenuifoliolata* Vuych. [1869]. Steer Lane, Oxshott, Surrey. August 5, 1917. Alien. One very large plant producing hundreds of flowering shoots.—C. E. BRITTON. "Agrees fairly well with the description of this variety given by Mr Druce in *Rep.*, *B.E.C.*, 17, 1911, but the '*gris*' hairs are not very apparent and the inflorescence is scarcely 'few-flowered, often reduced to 2-3.'"—SALMON.

M. sylvestris Fries. Kingston-on-Sea, Sussex, August 10, 1917. —A. WEBSTER.

M. apiculata Willd., f. *confinis*. Waste ground at Billingshurst, Sussex, July 29, 1917.—A. WEBSTER. "*M. hispida* Gaertn., var. *confinis* Burnat."—THELLUNG.

Melilotus arvensis Wallr. Newport, Isle of Wight, August 1915. Coll. F. STRATTON; comm. G. C. DRUCE.

Melilotus ——? Army camping ground, Thetford, v.-c. 28, October 27, 1916. Plant prostrate; root very large and succulent.—F. ROBINSON. "No flowers; fruit of *arvensis*. Noted as being prostrate; this makes it sub-var. *supinus*. Semen ex Rouy *Fl. de France* v., 59."—MARSHALL. "*M. arvensis* Wallr."—THELLUNG & DRUCE.

Trifolium subterraneum L. Field near Perranporth, v.-c. 1, June 1, 1917.—F. RILSTONE.

T. hybridum L., f. *prolifera*. Roadside near Neston, Cheshire, June 25, 1917.—C. WATERFALL. "Var. *phyllanthum* Seringe."—DRUCE & THELLUNG.

Lotus uliginosus Schkuhr, var. *pilosus* Beeke. Damp hollows in sand-dunes, Ainsdale, Lancs. S., v.-c. 59, August 20, 1915.—J. A. WHELDON.

L. uliginosus Schkuhr, var. *glabriusculus* (Bab.). Roadside bank near Bride, Isle of Man, August 6, 1917. Although much less hairy than the Ainsdale plant sent, it was growing in a far drier situation.—J. A. WHELDON.

L. angustissimus L. Slopes above cliffs, Polperro, v.-c. 2, June 14, 1917.—F. RILSTONE.

Vicia tetrasperma Moench. Creeping over bushes, Maslow Woods, Rossett, Denbighshire, June 13, 1917.—C. WATERFALL. "No, this is *V. hirsuta* S. F. Gray, var. *angustifolia*."—DRUCE.

Lathyrus Aphaca L. Borders of fields, Portland, Dorset, July 18, 1890, &c.—J. W. WHITE.

Spiraea Douglasii Hook. Edge of swampy pool, Delamere Forest, near Cuddington, Cheshire, July 25, 1917.—C. WATERFALL. "Yes, frequently planted. It is a beautiful North American species named after the intrepid explorer David Douglas."—DRUCE.

S. salicifolia L. Delamere Forest, near Cuddington, Cheshire, July 1917.—C. WATERFALL.

S. Ulmaria L., var. *denudata* Boenn. [301]. Lyn Valley, wood by Hoar Oak Water, Devon N., v.-c. 4, August 7, 1917. With intermediates between var. and type. A few specimens with the underside of the leaves quite glabrous among hundreds of the type. All grades of intermediates occurred from specimens with small bald patches to others in which a little down could be detected near the margin of some leaflets.—W. C. BARTON. "Yes. Leaves quite glabrous beneath."—MARSHALL. "Yes, for cultural experiments of this variety see *Ann. Bot.* xxv., July 1912, by Prof. Yapp, and *Rep. B.E.C.*, i., 170, 1887."—DRUCE.

Rubus affinis Wh. & N. A small gathering from Tidenham Chase, v.-c. 34, July 28, 1917. W. M. Rogers agrees.—H. J. RIDDELSDELL. "I agree."—MARSHALL.

R. affinis Wh. & N. "The Moors," Alphamstone, Essex N., v.-c. 19, September 7, 1916.—G. C. BROWN. "Correct."—RIDDELSDELL.

R. argenteus Wh. & N., forma. Durdham Down, Bristol, West Gloucester, July, September, 1917.—J. W. WHITE. "Yes."—RIDDELSDELL. "Yes, serration more uneven than usual."—MARSHALL.

R. dumnoniensis Bab. Gravel pit, Barton Common, Hants S., August 18, 1917. "Yes, with small poor panicle."—RIDDELSDELL. "A strongly armed form of this, I believe; fruiting panicle, no flowers."—MARSHALL.

R. lacustris Rogers. Coppice at Glencoign, west bank of Ullswater, Cumberland, August 6, 1917.—S. H. BICKHAM. "No doubt."—RIDDELSDELL.

R. mercicus Bagnall. Barton Common, Hants S., August 20, 1917. Mr Rogers says "a record for Hants."—L. CUMMING. "Agrees well with description and specimens except in strongly cordate base of terminal leaflet."—RIDDELSDELL.

R. leucandrus Focke. Gravel pit on Barton Common, Hants S., August 17, 1917.—L. CUMMING. "A species I do not know well; it seems to agree with description, but panicle is very small."—RIDDELSDELL.

R. pyramidalis × *rusticanus*. Lyde Green, Pucklechurch, Gloster W., July 17, 1917.—IDA M. ROPER. "I much doubt this identification, though the plant seems a hybrid. Is there not *corylifolius* in it?"—RIDDELSDELL.

R. leucostachys × *rusticanus*. Tidenham Chase, v.-c. 34, July 1917. I took this for *R. iricus*, but Mr Rogers puts it to the hybrid. It is sent as a rather unusual and beautiful form, though in very small quantity, I am sorry to say.—H. J. RIDDELSDELL.

R. lasioclados Focke, var. *angustifolius* Rogers. Durdham Down, Bristol, Gloster W., July 15 and 24, 1917.—J. W. WHITE. "Yes, a form bearing strong suggestion of its hybrid origin. Mr Rogers agreed last year with my naming of this gathering of Mr White's."—RIDDELSDELL.

R. mucronatus Blox., var. *nudicaulis* Rogers. Road between Hordle and Fratton, Hants S., August 12, 1917.—L. CUMMING. "No doubt correct."—RIDDELSDELL.

R. anglosaxonicus Gelert (aggr.). Hillside, Clapton-in-Gordano, Somerset N., July 11 and August 16, 1917.—J. W. WHITE. "Certainly *R. dumetorum* Wh. & N., and, I believe, under var. *diversifolius* (Lindl.)."—RIDDELSDELL.

R. Drejeri Jensen, subsp. *Leyanus* Rogers. Barton Common, Hants S., August 20, 1917.—L. CUMMING. "No doubt correct."—RIDDELSDELL.

R. radula Weihe, subsp. *anglicanus* Rogers. By the railway bridge at Ashley, New Milton, Hants S., August 10, 1917.—L. CUMMING. "Yes."—RIDDELSDELL. "Poor material; but it agrees with authentic material."—MARSHALL.

R. fuscus Wh. & N., f. Wood above West Wycombe, v.-c. 24, August 17, 1917. In some woods along the road between West Wycombe and Stokenchurch, Bucks and Oxon, August 1917. I took the species to represent a weakly glandular form of *R. fuscus*. Leaves generally ternate. Mr Rogers agreed:—"A weak woodland form, though I seem to have nothing very like it in my herbarium." He does not admit a hybrid origin. "On the whole, and especially in habit, it seems nearest to my var. *nutans*, but it has none of its special features in leaves or panicle strongly marked enough, and so it must, I consider, be kept distinct from that, and be simply labelled a weak woodland form, in some respects recalling var. *nutans*, though keeping distinct from it."—H. J. RIDDELSDELL.

R. fuscus Wh. & N., var. *nutans* Rogers. Copse at Ashley, New Milton, Hants S., August 9, 1917.—L. CUMMING. "Yes."—RIDDELSDELL.

R. mutabilis Genev., var. *Naldretti* J. W. White. Grassy roadside, Thakeham, Sussex W., July 4, 1917.—J. W. WHITE. "Beautiful specimens of a local form, of which Mr White speaks with authority. An interesting point is the unusually irregular and compound dentation of some of the larger leaflets. In at least one case the leaf is in this respect indistinguishable from that of the type plant."—RIDDELSDELL.

R. corylifolius Sm., var. *sublustris* (Lees). Wiggenholt Common, Sussex W., July 4, 1917.—J. W. WHITE. "Undoubtedly under *sublustris* though stems show some angularity."—RIDDELSDELL. "Good *sublustris*."—MARSHALL.

Potentilla erecta × *procumbens*. Ham Common, Surrey, July 7, 1917.—C. E. BRITTON. "I agree. Nearer (on the whole) to *erecta* in flowers and stipules, but approaching *procumbens* in foliage."—MARSHALL.

P. norvegica L. Dickson's Nurseries, Chester, October 1916.—C. WATERFALL. "Yes, *norvegica*, but specimens of alien *Potentillae* should always be accompanied by the radical leaves."—DRUCE and THELLUNG.

Rosa canina L., sub-gr. *dumales*, var. *recognita* Rouy. Lane, Kingston Seymour, Som. N., September 17, 1917.—I. M. ROPER. "This is a variety of the group of *R. dumalis* Bechst., distinguished by its long narrow fruit and large more or less orbicular leaflets. Of var. *recognita* Rouy I know only the description given by Major Wolley-Dod in '*A List of Brit. Roses*' p. 16, viz., 'remarkable for both its leaflets and its fruit being narrow and attentuate at each end.' That applies to the fruit of the present specimen but certainly not to the leaflets."—BARCLAY. "Wolley-Dod (*List of Brit. Roses*, p. 16) writes of *R. recognita* that this species is remarkable for both its leaflets and its fruits being narrow and attenuate at each end, and Rouy's own description points to a rose with oval acute or oval lanceolate leaflets. Now, Miss Roper's rose is especially characterised by its broad leaflets—orbicular-elliptical—with a tendency to be cuspidate. It exhibits a general resemblance to the Surrey and Brecon roses referred to Rouy's species, in the unarmed flowering branches and elongated fruit, but the broad leaflets are quite sufficient to prevent this rose being placed to Rouy's species, though clearly it is related to that."—BRITTON.

Rosa —— ! [1187]. Chislehurst Common, Kent W., August 1, 1915.—C. E. BRITTON. "This is rather a puzzling form. Apart from its styles, the other characters would not, I think, suggest that it was a member of the Stylosae, but would make one think of a very thinly hairy variation of the group *R. dumetorum* Thuill. with irregular, sometimes double, teeth. But the styles arranged in a protruded column, united or free, almost quite glabrous, and in some cases at least with a fairly prominent disk, make one pause and ask if the sum of the characters exclude it from the Stylosae in spite of its styles. With some degree of doubt, I think they do, and that it must be considered, as I have said, a variation of the group of *R. dumetorum* Thuill."—BARCLAY. "Near *urbica*; but leaflets thinly hairy on the mid-rib beneath alone, fruit ultimately subglobose. It seems to agree fairly well with Wolley-Dod's description (*l.c.*, pp. 23, 24) of *R. sphaerocarpa* Pug. Leaflets rather small; styles thinly hairy. Colour of flowers not stated."—MARSHALL.

R. leucochroa Desv. [1817]. Headley, Surrey, July 6 and August 26, 1917.—C. E. BRITTON. "I think this is correct."—BARCLAY. "Wolley-Dod points out (*l.c.*, pp. 13-15) that true *R. leucochroa* Desv. is only *R. systyla* Bast., with yellowish-white flowers; this he gives for Devon S., Kent E., and Surrey. Mr Britton's plant is not a *systyla* form. It very closely approaches the *R. leucochroa* auct. angl., of South -West England, but has somewhat stouter-based, shorter, less markedly hooked prickles. I have observed this abundantly in Devon S., but only in flower. My one fruiting specimen (Hants S., Rogers) has practically identical hips. The difference is so trifling that I cannot separate them. An eastward extension of this plant's English range."—MARSHALL.

R. Borreri Woods. [1609]. Tow-path by the Thames above Molesey Hurst, Surrey. Flowers, June 23, 1916. Fruit, September 2, 1917.—C. E. BRITTON. "Yes. I think this is a variation of *R. tomentella* Lem. = *R. Borreri* Woods. The leaflets are not quite characteristic for the most part, and are much less hairy than usual, but taking the sum of its characters I think it is correctly named."—BARCLAY.

R. glauca Vill. of group *fugax* Gren. Bank of River Almond, Mid-Perth, September 1917. It is not easy to know the proper name for this variation of *R. glauca*, but *R. fugax* Gren. is certainly of the same group, thence I join it to that. It differs from the group to which *subcristata* Baker belongs by its glandular peduncles, glandular pedicels, and glandular backs of sepals. This group is not very common.—W. BARCLAY.

R. sub-coriifolia Barclay. Near Loch Fithie, Forfar, October 7, 1917.—R. & M. CORSTORPHINE. "This is correct, the bush has been rather late in ripening as in this neighbourhood of Perth all the sepals have usually fallen by the middle of September."—BARCLAY. "Analogous to the *subcanina* group of *R. glauca*, having reflexed sepals. It is noteworthy that the figure of *R. coriifolia* in *English Botany*, ed. iii., has them reflexed even on the rather immature fruit."—MARSHALL.

R. recondita Pug. Tidenham Chase, v.-c. 34, July 1917. Formerly distributed as *R. pomifera*. In larger quantity than I have ever seen it before in this locality. One good bush was found some way into the woods. There can be little doubt that it is native here. The naming is as given by Wolley-Dod in his monograph on the British Roses. —H. J. RIDDELSDELL. "I know this in a living state and believe that it is native. Though Major Wolley-Dod has referred it to *R. recondita*, 'which seems to be nothing whatever but a form of *R. pomifera* with more subfoliar glands than usual' (*A List of British Roses. Journ. Bot.*, 39, 1911), I do not think that the glands are numerous enough here to take it off the type. Mr Ley's Welsh examples named *R. recondita* are much more thickly glandular, have smaller leaflets, and approach *R. mollis* rather closely."—MARSHALL. "This is, no doubt, a variation of *R. pomifera* Herm., and as it has a certain number of subfoliar glands, it may be named *R. recondita* Puget = *R. pomifera* Herm., forma *recondita* Christ, Rosen der Schweiz. This variety is simply *R. pomifera* Herm. with subfoliar glands, usually numerous. Christ remarks that the stronger or weaker glandularity, on the ground of which Déséglise has separated his three forms (viz., *R. pomifera*, without subfoliar glands; *R. recondita*; subfoliar glands present; and *R. Gaudini*, both sides of the leaflets glandular) completely fluctuates and changes on the same specimen. It is the case, I believe, that *R. pomifera* occurs but rarely without some subfoliar glands. In *R. mollis* Sm. forms parallel to the above three occur, and in Scotland at least *R. mollis* with leaflets destitute of glands is comparatively rare. In my opinion *R. pomifera* Herm. in any of its varieties is not indigenous in Britain."—BARCLAY.

Pyrus Pyraster, var. *Déséglisei* Rouy & Camus. Yate Lower Common, Gloster W., August and September 1917. Leaves and fruit of a large tree growing with another large and several smaller ones on the margin of a wood bounded by a small stream. Attention was first drawn to these trees in the spring of this year by the profusion of blossom which they bore, and this was followed by an abundant crop of fruit at the end of the summer. The leaves being suborbicular, cordate, finely serrate, glabrous and shining on the upper surface, this must be placed in the *Pyraster* section of *P. com-*

munis L., although they are thinly downy beneath even when mature. In the small globose fruit it appears to come nearest to the var. *Déséglisei* Rouy & Camus. The branchlets occasionally end in rather stout spines.—C. BUCKNALL. "Agrees well with the description, except that the leaves can hardly be called "rélativement grandes," being somewhat smaller than those of average British *P. cordata* Desv. (wrongly reduced by Rouy & Camus to a var. *Desvauxii* of *P. Pyraster*, as the flowers and fruit are very distinct), often rather square in outline, and not seldom truncate or slightly retuse at the top. I incline to think that var. *Déséglisei* should be raised to specific, or at least subspecific rank, judging by this material; but one would like to see flowers. If the characters are constant, it may be named *P. Déséglisei*."—MARSHALL. "Welcome and excellent examples of a plant intermediate between *cordata* and *Pyraster*. Rouy & Camus place both as varieties of *P. Pyraster*. It differs from *cordata* (called *Desvauxii* in *Fl. Fr.*) in the fruits being the size of a cherry (in *cordata* of a small nut), and in the rather larger leaves. The authors are doubtless correct in refusing specific rank to *cordata*."—DRUCE.

P. Aucuparia Ehrh. Seedlings. Wood in East Lyn Valley, above Watersmeet, Devon N., August 27, 1917.—W. C. BARTON.

P. latifolia Syme. [284]. East Lyn Valley, wood above Watersmeet, Devon N., August 25, 1917.—W. C. BARTON. "Yes, but leaves narrower and less deeply cut than in my specimens from the Conan River, East Ross, which Dr Hedlund named *Sorbus latifolia* Pers. The foliage closely resembles that of Mr Bickham's gathering from Watersmeet (labelled β. *decipiens*), but the fruit is much larger. I think that both may fairly come under the type, though somewhat tending towards the variety."—MARSHALL.

P. latifolia Syme, var. *decipiens* (Bechst.) E. & H. [285]. East Lyn Valley, wood above Watersmeet, Devon N., August 25, 1917.—W. C. BARTON. "Yes, just like the Minehead plant figured as *S. scandica* in Syme *E.B.*, ed. iii., and by Mr N. E. Brown (figures 483, C., D., 484), in the *Supplement*, as *P. rotundifolia*, var. *decipiens*."—MARSHALL.

Crataegus monogyna Jacq., f. *subcristata* Druce. Cadbury Hill, Yatton, Som. N., v.-c. 6, May 29 and October 15, 1917.—I. M. ROPER. "Yes. See *Rep. B.E.C.* 196, 1915."—DRUCE.

C. Crus-galli L. Near Moreton, Dorset, July 1917.—Coll. T. H. LEACH. This North American thorn is plentifully naturalised in the neighbourhood of Moreton, Dorset, whence Lieut. T. H. Leach sent these examples. Comm. G. C. DRUCE.

Saxifraga Sternbergii Willd., var. (*gracilis* ined.). [4406]. Originally from Black Head, Co. Clare (S. H. Bickham); grown at West Monkton Rectory for about twelve years. Very different from the typical Brandon Mountain plant sent to the Club last year. It seems to be the prevailing Irish form of *S. Sternbergii*.—E. S. MARSHALL.

S. rosacea Moench (*S. decipiens* Ehrh. *Exsiccata* No. 5!; *S. palmata* Smith!). [3670]. Originally gathered on or near Snowdon, Carnarvon, v.-c. 49, by a guide named Williams; I had it from Mr S. H. Bickham. Cultivated at West Monkton, May 12, 1917. Ehrhart's name unfortunately cannot stand as he never published a description.—E. S. MARSHALL.

Saxifraga, spec. nov. (*S. Drucei* ined.). [3900]. Root from near the summit of Brandon Mountain, Kerry S., 1911; garden, West Monkton, May 29 and June 10, 1916. This plant is quite distinct from any of our named segregates; I hope to describe it in due course. Mr G. C. Druce was apparently the first to gather it in 1906. —E. S. MARSHALL. "For a full description of this new species see *Journ. Bot.* 65, 1918."—EDITOR.

S. hirta Sm.! [3901]. Brought (1911) from Brandon Mountain; fl. garden, West Monkton, May 22, 1917. Closely allied to *S. rosacea* (*decipiens*), but quite distinct. It forms a dense, grey-green, hairy mat. Barren shoots mostly in one plane, straight, or nearly so. *S. hibernica* Haworth appears to be the same thing. This is the typical form; it varies a good deal in habit and pubescence on Brandon.—E. S. MARSHALL.

Tillaea muscosa L. South Cliffs, Guernsey, April 1913.—C. V. B. MARQUAND.

Drosera anglica Huds. Moor, Coninish, Tyndrum, Perthshire August 8, 1917.—R. J. BURDON.

Callitriche obtusangula Le Gall. Moorland streamlet on ascent of Moel Fama, Flintshire, August 30, 1916.—C. WATERFALL. "The fruit will not do at all for *C. obtusangula*; I call this *C. stagnalis*, var. *serpyllifolia* Lönnroth."—MARSHALL. "The fruits have a ± transparent wing to each of the four free edges: I should therefore name it *stagnalis*."—LUMB. "Under aggregate *stagnalis*; the angles of the solitary fruit in my specimen are acute."—DRUCE. "*C. platycarpa* Kütz."—BENNETT.

C. intermedia Hoffm. New Forest, Hants S., May 8, 1917.—G. C. DRUCE. "A form with narrow leaves."—MARSHALL. "Simulates the northern plant which Dr Williams (*Prod. Fl. Brit.* 9, 509,

1912) refers to the *C. angustifolia* of Hoppe, but which many German authors refer to *C. vernalis* Kütz (*palustris* L.)."—BENNETT.

C. truncata Guss. [1409]. In the Bridgwater and Taunton Canal at Charlton, parish of Creech St Michael, Somerset S., v.-c. 5, July 17, 1917. A fair amount of fruit (some sessile, some shortly stalked) was present.—E. S. MARSHALL. "In the same canal as Mr Marshall records it in his *Supp. Fl. Somerset* 81, 1914, as growing between Bathport and Durston, the present station a little south of Charlton, where it was plentiful."—BENNETT.

C. truncata Guss. Stream near Grand Mare, Guernsey, August 1912.—C. V. B. MARQUAND. "Rightly named."—MARSHALL. "Yes, in this locality it is, I believe, always barren. It is the var. *occidentalis* (R. & F.) (see *Rep. B.E.C.* 169, 1912), as is Mr Marshall's Somerset plant. Both are beautiful examples."—DRUCE.

Peplis Portula L., var. *dentata* Druce. [289]. Marshy ground, Badgeworthy Valley, Devon N., August 22, 1917.—W. C. BARTON. "Rightly named, but this species varies so much in the calyx teeth that it can hardly be reckoned as a constant variety."—MARSHALL.

Epilobium montanum × *roseum*! In ditch near moors, Baildon, v.-c. 64, August 18, 1917. Altitude 800 ft. The parents occur in the immediate neighbourhood. Name suggested by Mr Druce.—J. CRYER. "As usual with his plants, Mr Cryer has dried this beautifully, but my specimen is a tall, slender, narrow-leaved *E. roseum* with no evidence of *E. montanum*."—MARSHALL. "In my opinion all the plants sent by Mr Cryer under this name were but forms of *E. roseum*."—BRITTON.

E. hirsutum × *palustre* (= × *E. Waterfalli* Marshall). Swampy edge of sheet of water near Helsby Station, Cheshire, August 12, 1916.—C. WATERFALL. "This is rightly named; but the original specimen described by me is stronger and branches freely."—MARSHALL.

Ludwigia palustris Ell. New Forest, Hants S., June 1917. These were gathered before flowering and are sent to show that the plant still exists.—G. C. DRUCE.

Circaea alpina L., var. *intermedia* (Ehrh.). Bank of stream, Meole Brace, Shropshire, September 1917.—J. COSMO MELVILL. "No, the type, rather luxuriant. Ehrhart's *C. intermedia* is much larger and approaches *C. lutetiana* in appearance."—MARSHALL and PEARSALL.

Helosciadium repens Koch. Binsey Common and Port Meadow, Oxford, v.-c. 23, July and August 1917. Members may be glad of further examples. Those sheets from Port Meadow which are labelled as *H. repens*, f. contain plants gathered from the soft mud of a very shallow pond, which is only wet and soft in rainy weather. They indicate well the direction in which the species changes as it gets on wetter ground. The habit of the creeping stem is laxer, the plant coarser, the foliage longer, and the leaflets rather longer and less divided. But the series is continuous with the plant as it appears in great quantity on the drier parts of Port Meadow. *H. nodiflorum* was not there; and there is no admixture as in the case of the Binsey Common plants distributed last year. I hope to explore Port Meadow still further in 1918.—H. J. RIDDELSDELL.

Apium inundatum H. G. Reichb. Derwent Water, v.-c. 70, August 6, 1917.—W. H. PEARSALL. " Mostly type; one specimen comes very near var. *fluitans* Fr."—RIDDELSDELL. " Excellent examples of the submerged state."—MARSHALL.

Anthriscus sylvestris Hoffm., var. *latisecta* Druce. Near Druce, Dorset, May 1917 (see *Rep. B.E.C.* 412, 1916).—G. C. DRUCE. " Very interesting; I have never seen such broad foliage. In this respect it seems to agree closely with Rouy & Camus's description (*Fl. de Fr.* vii. 303) of *A. alpestris* Wimm. & Grab. = *A. sylvestris* β. *alpestris* Wimm. "—MARSHALL. " With broad obtuse apiculate ultimate leaf-segments. There is no figure quite matching this form in Petersen's *Indledende Studier over Polymorphien Hos Anthriscus silvestris.*"—BRITTON.

A. sylvestris Hoffm., var. *angustisecta* Druce. See *Rep. B.E.C.* 412, 1916. The Glen and Traquair, Peebles, September 1917. Not an extreme form. It is the prevailing plant in Scotland where it is much scarcer than in England and thins out northwards.—G. C. DRUCE. " This is not identical with, but appears to approach rather closely the group of *Anthriscus sylvestris* called by Petersen *Aciphylla minor.*"—BRITTON.

Peucedanum officinale L. Gathered in early June on stiff clay-banks near Kirby-le-Soken, Essex N., before the flowering period. The statement in the British floras that it is a salt marsh plant is not correct. Here, as at Whitstable, it does not enter the marshland proper, but luxuriates on clay-banks above tidal influence.—G. C. DRUCE.

Daucus gummifer All. Holyhead, Anglesey, August 1917. See *Rep. B.E.C.* 1917. Mr Salmon has referred the Holyhead plants to the var. *intermedius* Corbière. Rouy & Camus say that it differs from the type in the " Feuilles non luisantes." The fruit-prickles are a millimetre long, not ½ mm., as in true *gummifer*.—G. C. DRUCE. "My example has not any *ripe* fruit, but it looks to me like var. *intermedius* Corb. See *Journ. Bot.* 320, 1917."—SALMON.

Galium boreale L. West shore of Derwent Water, Cumberland, August 6, 1917.—W. H. PEARSALL.

G. Mollugo × *verum*. [1816]. Roadside near Leatherhead, Surrey, July 6, 1917.—C. E. BRITTON. "A *per-verum* form of the hybrid."—MARSHALL. "Beautiful examples of this interesting hybrid which is rare in Surrey. Mr Britton enabled me to examine the plants *in situ*, and one was able to note on the growing specimens features of both parents—*Mollugo* (*elatum*) and *verum*—with which it grew."—SALMON.

G. verum, var. *maritimum* × *G. Mollugo*. comb. nov. Hayling Island, Hants S., July 1917. See *Rep. B.E.C.* 32, 1917. This is a new combination for the second parent is not true *verum*, but the duneland form called var. *maritimum* DC. All shades from pure white to deep yellow occurred as the hybrid approached one or the other parent. The narrow leaf seemed a dominant character.—G. C. DRUCE. "A small form of *G. Mollugo* × *verum*, approaching *G. verum*. Whether it is legitimate to append 'comb. nov.' to a varietal hybrid seems questionable; in any case, our so-called British var. *maritimum* is hardly more than a starved *state*, growing in sea-sand (perhaps the var. *littorale* Brébisson) and does not agree with the description of *G. maritimum* DC. in the *Prodromus* iv., 603:—'Caule demisso ramosissimo basi glabro apice villoso. ovariis glabris.'"—MARSHALL.

G. palustre L., var ? Moist places, River Welland at Wakerley, v.-c. 32, July 7, 1917. Differs from var. *elongatum* (Presl) in the broader and more obtuse leaves, fewer flowers and entire absence of fruit.—G. CHESTER. "I think that this may come under var. *lanceolatum* Uechtr. (*G. elongatum* auct. angl., non Presl), though weak and tending somewhat towards the type."—MARSHALL. "A broad-leaved form of the var. *lanceolatum* Uechtritz. The stem angles are very rough. It differs from var. *maximum* in the few-flowered cyme."—DRUCE.

G. verum L., var. *maritimum* DC. Sand-dunes near Hull Road, Lancs. S., v.-c. 59, July 21, 1917. Some of the examples show well the underground ramifications which are so extensive in this plant. They often greatly exceed the parts above ground in length.—J. A. WHELDON. "Yes, the same as var *littorale* Bréb."—SALMON.

Valeriana officinalis L. = *Mikanii* Syme. [291]. Abundant on Bury Hill, Sussex W., June 18, 1917.—W. C. BARTON. "Lower leaves absent, but it looks like *V. officinalis* (Syme's *Mikanii*)."—Marshall.

V. rimosa Bast. (= *V. Auricula* DC.). Oatfield, Tydyn-y-gwynt, Rhyd-y-myn, Flintshire, August 19,1916.—C. Waterfall. "Rouy makes *V. rimosa* Bast. (1814) synonymous with *V. dentata* DC., but states that it is not *V. dentata* Pollich; under this he places *V. Auricula* DC., as β. *Auricula* Rouy."—Marshall. "My specimen is *V. dentata* Poll."—Druce.

Scabiosa Columbaria L., f. *alba*. Roots gathered on side of a ravine, Great Orme's Head, August 1916; flowered at Ledbury, July 14,1917.—S. H. Bickham. "Yes, and like my own gathering from Llandudno has much divided leaf segments. Could Mr Bickham next year supply ripe fruit?"—Druce.

Aster angustifolius Willd. A casual in the gravel of a new road at Ashley, New Milton, Hants S., August 20, 1917.—L. Cumming.

Erigeron acris L. Small quarry on Bodafon Hill near Craig-y-don, Llandudno, Carnarvonshire, September 30, 1916.—C. Waterfall.

E. acris L. Tottenhill, Norfolk W., July 27, 1917. Coll. J. E. Little and Anna Luddington. White pappus.—J. E. Little. "Pappus whiter than in any of my series, but it may tend to darken in the herbarium. Linnaeus made the genus neuter. Rouy writes *E. acer* L., which makes a man say what he has not said."—Marshall. "This is var. *corymbosum* Wallr."—Druce.

Ambrosia artemisifolia L. [336]. Army camping ground Thetford, v.-c. 28, October 27, 1916.—F. Robinson. "Yes."—Druce.

Bidens pilosa L. Waste ground, Bradford, v.-c. 64, September 17, 1917. Teste G. C. Druce.—J. Cryer.

Galinsoga parviflora Ruiz and Pav., var. *adenophora* Thell. [1880]. Cultivated fields, Ham, Surrey, August 21, 1917. Distributed for the purpose of ascertaining whether any other non-glandular form occurs in this country.—C. E. Britton. "All my British specimens (Kew and Milford, Surrey; Oxford) have glands on the peduncles."—Marshall.

Achillea Millefolium L., f. *conspicua*. See *Rep. B.E.C.* 34, 1917. The Parks, Oxford, September 1917. This form with large prominent ligule seems to occupy distinct areas. It was plentiful about

Beddgelert, Carnarvon and was noticed near Pyrford, Surrey, and is doubtless widely spread.—G. C. Druce.

A. Millefolium L., var. *lanata* Koch. [288]. Countisbury Common, edge of cornfield at 1000 feet, Devon N., v.-c. 4. Koch (*Syn.* ed. i., 373, 1837) says:—Type "foliis lanato-villosis vel subglabris" and var. *lanata* "caulis, folia et corymbus lanato-villosa; ceterum formam vulgarem refert." Specimens sent are not extreme though they answer to the description. The variety seems to be only a form of exposed ground.—W. C. Barton. "Not distinguishable from type. My specimens of the variety from Shetland and Caithness are quite woolly, and only four to eight inches high. Mr Arthur Bennett believes that var. *villosum* Hartman Handb. Skand. Fl. ed. i., 319, 1820, is the proper name for this."—Marshall. "Although hairier than the type it is not, I think, sufficiently clothed to be called *lanata*."—Druce.

A. nobilis L. Near flour-mill, Par, v.-c. 2, July 14 and September 7, 1917 (South Europe). The odour when fresh is distinctly a mixture of the odours of *A. Millefolium* and *Tanacetum vulgare* with the tansy smell predominant.—F. Rilstone. "Yes."—Druce.

Anthemis ——? Waste ground, St Philip's, Bristol, June 15, 1914.—J. W. White. "*A. Wiedmanniana* Fisch. and Mey. A native of Asia Minor; also adventive in Germany."—Thellung.

A. Cotula L. Near Neston, Cheshire, v.-c. 58, June 23, 1917.—C. Waterfall. "Our examples are *Matricaria Chamomilla* L."—Marshall and Druce.

Artemisia gallica Willd. Chichester Harbour, Sussex, September 18, 1917.—R. J. Burdon. "Yes. It seems to deserve sub-specific rank."—Druce.

A. Stelleriana Besser. [4389]. Sandy coast, Marazion, Cornwall W., v.-c. 1, June 26, 1917. Mr F. J. Hanbury, with whom I gathered it, told me that he had seen it there about forty years ago.—E. S. Marshall.

Petasites fragrans Presl. Hedge-banks near Torquay, Devon S., February 1917.—C. Waterfall.

Senecio squalidus L. Railway banks at Brymbo Station, Denbighshire, September 8, 1916.—C. Waterfall. "Yes, the type with hairy achenes; and a N.C.R."—Druce.

S. viscosus L. Waste ground, Saltney, Flintshire, August 18, 1917.—C. Waterfall.

S. lautus Forst. Waste ground, Bradford, v.-c. 64 (in abundance), September 27, 1917. First noticed by the contributor on July 8, 1908, on the same ground.—J. Cryer. "*S. inaequidens* DC. Spec. Austro-Africana. *S. lauto* persimilis mihi potius videtur."—Thellung.

Cryptostemma calendulaceum Br. Waste ground, Bradford, v.-c. 64, August 28, 1917.—J. Cryer. "Yes. Conveyed by Cape sheep to Australia, &c., where it is called the Cape Weed. Now a most conspicuous feature around Adelaide. It comes to Britain in Australian and Cape wool. The correct name is *Cryptostemma Calendula* (L.) Druce. Robert Brown altered the Linnean trivial unnecessarily."—Druce.

Centaurea nigrescens Willd. [1832]. Epsom Downs, Surrey, July 2, 1917. Foliage bright green in colour; radical leaves long-stalked, lamina oblanceolate; lower cauline leaves stalked, oblong-oblanceolate; upper stem leaves sessile, lanceolate, all entire. Stems simple, bearing at the apex usually geminate, sessile or shortly peduncled capituli. Scales of the phyllaries brown, spaced, shortly and irregularly fimbriate. Outer florets radiate, all rosy-pink. Pappus absent.—C. E. Britton. "Koch (*Synopsis*, ed. ii., 469) describes *C. nigrescens* Willd. as having the involucral appendages pectinate-fimbriate, the fimbriae about equalling the breadth of the disk. I have nothing to match it under *C. nigra*; it looks nearer to *C. Jacea*."—Marshall. "The phyllaries are very unlike those of our normal *C. nigra* and remind one of *C. Jacea*."—Salmon. "*C. Jacea* L., forma *subdiscoidea*."—Thellung.

Crepis biennis L. Railway-bank, Nailsea, Som. N., v.-c. 6, June 11, 1917. Two plants only were seen in 1900, and now the banks are covered with it, and it has spread freely into the permanent pastures near.—I. M. Roper.

C. capillaris Wallr., ? var. *diffusa* (DC.). The Haggs, Dalton-in-Furness, v.-c. 69b. This looks poor material, but it represents the plant as it grows. It seems never to stray from the shortly-grassy hedge-banks. The flower before pressing is about ⅝ inch in diameter. Have large plants ever been grown from seeds of such as these?—D. Lumb. "In DC. *Prodromus* vii., 162, where it is called *C. polymorpha* Wallr. (= *C. virens* L.), var. *diffusa* Wallr., the variety is thus defined :—'Caule decumbente diffuso, pedicellis filiformibus, foliis inferioribus cauliniisque amplexicaulibus lanceolato-linearibus parce dentatis'; *C. diffusa* DC. and *Lapsana capillaris* L. being given as synonyms. *C. agrestis* Waldst. and Kit. is here reckoned as a distinct species, four numbers later, following *C. tectorum* L."—Marshall. "Yes, this may pass."—Druce. "Yes, rightly named I believe. It agrees with DC.'s description in *Fl. Fr.* vi., 118 (1815), but I have not by me his earlier diagnosis of the plant in *Cat. Hort. Monsp.* 98 (1813)."—SALMON.

Hieracium Pilosella L., var. ? Barrow Hill Quarry, Potters Marston, Leicester, v.-c. 55, June 1917.—A. E. WADE. "Type. We see no varietal character."—MARSHALL and LINTON.

H. silvaticum Gouan, var. *tricolor* W. R. Linton. Silverdale v.-c. 60, June 1, 1917. Also specimens from Silverdale collected in 1915 grown in my garden at Shipley at the Rev. E. F. Linton's suggestion, June 14, 1917. Named *H. cymbifolium* by the late Rev. A. Ley. The Rev. E. F. Linton on first seeing specimens wrote:—"I believe this is dwarf *H. expallidiforme* Dahlst. The Rev. E. S. Marshall suggested *H. sanguineum* Ley. See *Rep. B.E.C.* 150, 1915. Rev. E. F. Linton having seen both wild and cult. spec. named it var. *tricolor* W. R. Linton.—J. CRYER. "These agree well with my named material from Yorks W., &c."—MARSHALL.

H. pellucidum Laestad. On walls, Grey Abbey, Co. Down, July 16, 1917.—C. H. WADDELL. "Not the type (Ley's *lucidulum*), but very like the larger plant, formerly considered to be typical. Neither of these is given for any Irish station in W. R. Linton's *British Hieracia*."—MARSHALL.

H. maculatum Sm. Old walls, Chichester, June 6, 1917.—R. J. BURDON. "Yes."—MARSHALL and LINTON.

H. cacuminatum Dahlst. [3197]. Originally (1907) from Porlock Weir, Somerset S., v.-c. 5, fl. garden, West Monkton, July 5, 1917. Styles yellow, ligules golden-yellow tips pilose; heads very glandular, floccose, epilose, narrow in bud.—E. S. MARSHALL.

Hieracium ——? [3198]. Originally from Culbone, Somerset S., v.-c. 5, fl. garden, West Monkton, July 6, 1917. Styles yellow. Rev. W. R. Linton, in 1907, wrote that this was near *H. cacuminatum* and *H. irriguum*, but was probably a new form. It cannot be referred to either, I feel sure. From [3197] it differs as follows:—Ligules lighter yellow, tips glabrous; heads less densely glandular, more grey-floccose, on longer peduncles; leaves thinner, narrower, less frequently and less deeply toothed.—E. S. MARSHALL.

Hieracium ——? Strathfillan, Perthshire, August 9, 1917.—R. J. BURDON. "*H. Dewari* Boswell (Syme). I found it there by the river in 1888."—MARSHALL. "*H. Dewari*."—LINTON.

H. gothicum Fr., forma. [2867]. Roots from near Bridge of Brown (near Tomintoul) just within Inverness E., v.-c. 96, close to the Banff border (1906): fl. West Monkton, July 5, 1917. Remarkable for its numerous, strongly toothed leaves, and for the absence of glands on the heads which are more pilose than usual. Styles livescent. Named by Revs. E. F. and W. R. Linton, on wild material.—E. S. Marshall.

H. crocatum Fr. Origin, Winch Bridge, Teesdale, v.-c. 64. Cult., Shipley, July 27, 1917. Teste Rev. E. F. Linton.—J. Cryer. "Rightly named, I think; foliage much broadened by cultivation, but heads very like those of the Scottish form. Backhouse records it from Teesdale."—Marshall.

Taraxacum laevigatum DC. Sand dunes, Hall Road, Lancs. S., July 8, 1917. Fruits of this and of *T. erythrospermum* sent for comparison.—J. A. Wheldon. "Yes, but *laevigatum* DC. is synonymous (teste Handel Mazetti) with *erythrospermum* (Andrz.); our old *laevigatum* is *obliquum* Dahlst."—Druce.

Lactuca Serriola L. [359]. Grown from seed gathered near Woolwich in 1916, August 16, 1917.—F. Robinson. "No, this is *L. saligna* L., an unarmed form of var. *runcinata* Gren. & Godr."—Druce.

Vaccinium Vitis-idæa L. Moorlands near Bwlch Gwyn, Denbighshire; flowers September 18, 1916; fruit September 1917.—C. Waterfall.

Andromeda polifolia L. Moss, Morecombe, v.-c. 60, August 6, 1917.—J. Cryer. "*A. polifolia* L."—Druce.

Loiseleuria procumbens Desv. Tyndrum, Perthshire, August 13, 1917.—R. J. Burdon.

Boretta cantabrica O.K. Connemara, Ireland, August 16, 1907. —J. W. White.

Limonium vulgare Mill. Chichester Harbour, Sussex, July 10, 1917.—R. J. Burdon. "Yes."—Salmon.

L. vulgare Mill., var. *pyramidale* Druce. Chichester Harbour, Sussex, July 10, 1917.—R. J. Burdon. "Yes. Rather weak."—Marshall. "Three sheets were sent me containing plants averaging 9 in. high; f. *pyramidale* is usually far more luxuriant. I believe these examples are *L. vulgare* crossed with *L. humile*, the latter parent not very obvious but showing up in the long spikes with loosely-set spikelets."—Salmon.

L. humile Mill. Chichester Harbour, Sussex, July 10, 1917.—R. J. Burdon. "Yes."—Marshall. "Of three sheets sent me, one seems certainly correctly named and almost typical, the second appears to be *L. humile* × *vulgare*, whilst the third sheet, containing four panicles, may, I believe, be also put under this hybrid, the *humile* parent much predominating."—SALMON.

Primula elatior × *veris*. Cultivated at Ledbury, May 7, 1917. For about eight years I have grown at Ledbury a colony of some fifty or more plants of *P. elatior* Jacq., and among them have four roots of *P. veris*. Every year artificial pollination has been attempted, but until last year no sign of hybridity was seen among the seedlings of *P. elatior*, which come up abundantly. One plant then appeared different from the others and has continued so this year. The flowers are yellower in colour, and more drooping than in *P. elatior* and the leaves more resemble those of *P. veris*. On the other hand the hairiness of the scape as also the calyx teeth are those of *P. elatior*. The Rev. E. S. Marshall, to whom I sent a specimen, writes "In essential characters your *P. elatior* × *veris*, though fewer-flowered and smaller-leaved agrees quite well with my two sheets (1886) of the wild hybrid from near Saffron Walden."—S. H. BICKHAM.

Lysimachia ——? Swamp, Lake Windermere, Lancashire August 1, 1895.—C. WATERFALL. "We should name this *stricta* Aiton."—LUMB and PEARSALL. "This is *L. racemosa* Lam. (*L. stricta* Ait.)."—DRUCE. Agreed to by THELLUNG.

Centaurium umbellatum Gilib. Near Mollington, Cheshire. July 28, 1917.—C. WATERFALL. "Yes, typical."—MARSHALL.

Gentiana Pneumonanthe L. Near Holyhead, Anglesey, August 1917.—G. C. DRUCE and Hon. Mrs GUY BARING.

G. Amarella L. (1) Slag heaps, Minerva Lime Works, Denbighshire; (2) near Cileen, Flintshire.—C. WATERFALL. "Right."—MARSHALL.

Polemonium caeruleum L. Malham, v.-c. 64, June 17, 1917.—J. CRYER.

× *Symphytum lilacinum* Bucknall (*S. officinale* (α) *ochroleucum* × (β) *purpureum* × > *peregrinum*). Bank of the Frome, Oldbury Court, Bristol, Gloster W., June 6, 1917.—J. W. WHITE.

Lithospermum purpureo-caeruleum L. Borders of woods near Congresbury, Somerset N., May 14, 1894.—J. W. WHITE.

Volvulus sepium Medic. Flowers pink. Thicket by roadside near Rhyd-y-mwyn, Flintshire, August 29, 1916.—C. WATERFALL.

"*Convolvulus dahuricus* Sims ob pubescentiam manifestam mihi potius videtur."—THELLUNG.

Solanum nigrum L. Dickson's Nurseries, Chester, October 1916. —C. WATERFALL.

S. nigrum L., var ? In abundance on waste ground, Bradford, v.-c. 64, August 23, 1917.—J. CRYER. "I have a plant from Witley, Surrey, which comes very near this."—MARSHALL. "*S. nigrum* L., var."—THELLUNG.

S. nigrum L., var. *miniatum* (Bernh.). Origin Quenvais, Jersey (W. R. Attenborough). Coll. E. W. Hunnybun, September 8, 1917, who grew it at Ventnor and sent it fresh.—S. H. BICKHAM. "Yes. Rouy (*Fl. de France* x., 366) calls this *S. alatum* Moench (1794) = *S. miniatum* Bernh. apud Willd. *Enum.* 236 = *S. nigrum*, var. *miniatum* Mert. & Koch *Deutschlands Flora* ii., 231."—MARSHALL. "This seems well deserving of sub-specific or even specific rank since the leaf-cutting is different as well as the red berries, and it keeps constant in culture. I should label it by its old name *S. rubrum* Mill."—DRUCE.

Physalis ——? On waste land, Bradford, v.-c. 64, September 11, 1917. Also at Meanwood, Leeds, and at Girlington, Bradford. —J. CRYER. "Probably *minima* L."—DRUCE. "*Minima* L."—THELLUNG.

Nicandra physaloides Gaertn. Waste ground, Bradford, v.-c. 64. In abundance. A very fine series of plants, September 21, 1917.—J. CRYER. "Yes."—DRUCE.

Verbascum nigrum × *V. olympicum*, hybr. nov. See *Rep. B.E.C.* 39, 1917. This new hybrid arose spontaneously at Oxford with the two parents, August 1917, and is a good intermediate. Some of the plants had narrow leaves unlike either parent.—G. C. DRUCE.

Linaria repens × *vulgaris*. Railway side near Oxford, August 1917, where it has persisted since 1890 (see *Flora Berks*, 368). These may possibly persist as perennials or may come true from seed. Only very few roots of *repens* are now left, but the hybrid is quite conspicuous and plentiful.—G. C. DRUCE. "On the *repens* side." —MARSHALL.

Veronica spicata L. [361]. Sandy heathland, Garboldisham, v.-c. 28.—F. ROBINSON.

V. hybrida L. Amongst scrub on common land, Gloddaeth, Llandudno, Carnarvonshire, July 7, 1917.—C. WATERFALL.

V. humifusa Dickson (*V. serpyllifolia*, var. *borealis* Laestadius). [1111]. Root from the mountains north of Loch Laggan, v.-c. 97, Inverness W. (1916); H. garden, West Monkton, June 5, 1917. *V. tenella* All. seems to be another plant not occurring north of the Alps. I possess one of Dickson's own specimens. Ordinary *V. serpyllifolia* grows within a few yards of the ground on which I planted this, and the differences were strongly marked when fresh. I have never met with *V. humifusa* below 2000 feet in Scotland. It is noteworthy for its more prostrate habit and thinner, duller coloured, usually larger leaves; the flowers are much bluer and larger, and the capsules are glandular-hairy all over. Syme makes it a subspecies; Watson (*Top. Bot.*), a species, which I incline to think is its true rank, having seen no intermediates. I have gathered a form with pure white flowers.—E. S. MARSHALL. "This seems to warrant the specific rank given it. It keeps quite constant in culture."—DRUCE.

Euphrasia stricta Host. (1) Hawkshead Moor, v.-c. 69b, July 27, 1917; (2) Highfield, Dalton-in-Furness, July 1, 1917.—W. H. PEARSALL. "In *E. stricta* the teeth of bracts and leaves are often much more aristate than in Mr Pearsall's plants, but I think they come under that species."—SALMON. "Very different in appearance from plants so named by Townsend, but according to Mr Bucknall's key it must be that species. If it is, then Rouy's key is misleading, as the flowers should be 6-10 mm. long (as against 4-6 mm. for other species). The largest flower on my sheet of this gathering is slightly under 6 mm. long, but the shape of the sepals and the short capsules, &c., mark it off distinctly from *E. nemorosa*." —WHELDON. "This has much larger, broader foliage than in any of my *stricta* sheets, the upper leaves and bracts are very broad-based (not cuneate, as described by Wettstein), with blunter, only occasionally aristate teeth. It agrees much better with several gatherings referred to *E. borealis* by Townsend or Wettstein, and should, I believe, be so named."—MARSHALL. "(1) This is more like *E. stricta* than Mr Pearsall's specimens from Highfield. Teeth of bracts too acute for *E. borealis*. (2) This is like *E. brevipila* in habit, but is quite eglandular. It may be the var. *subeglandulosa*."—BUCKNALL. "(1) We have received three plants. One is clearly *borealis*, the other two may be *stricta*. (2) Our specimens seem to be *borealis* updrawn owing to their situation. The upper cauline leaves are obtuse and have obtuse teeth. In habit they approach *stricta* somewhat."—E. & H. DRABBLE.

E. borealis Towns. (1) Limestone scars above Dinkling Green, Lancs. W., September 11, 1917. (2) Banks of the Hodder below Whitewell, Yorks W., September 16, 1917.—W. G. TRAVIS and J. A. WHELDON. "(1) Like the plant from banks of Hodder, Whitewell, cf. *E. Kerneri*, forma. (2) Teeth of leaves and bracts too acute for *E. borealis*. As some of the corollas show a tendency to elongate, this may be a form of *E. Kerneri*."—BUCKNALL. "(1) *E. nemorosa*. The leaves in the specimens that we have received have acute teeth, and the general habit is not that of *borealis*. (2) This comes under *Kerneri* as we at present understand this plant."—E. & H. DRABBLE.

E. occidentalis Wetts. St Ives, Cornwall, v.-c. 1, July 20, 1917. Coll. Miss E. M. Parkinson; comm. W. H. PEARSALL. "Yes."—BUCKNALL and E. & H. DRABBLE.

E. curta Fr. Sandy ground north of Ramsey, Isle of Man. August 5, 1917. A large, very hairy form, which looked hoarier than any of the mainland plants I have seen.—J. A. WHELDON. "I think that this can scarcely be included with *E. curta*. The branching is different, the lower internodes are much longer, although the spike is very dense at the top; the leaves are larger and of a different shape; the stem, leaves, and bracts are more shaggy, with longer hairs. In these characters it agrees with, and in habit closely resembles Italian specimens of *E. tatarica* Fisch. The flowers in Continental specimens are sometimes large and showy, but often comparatively small and inconspicuous. The moderate size of the flowers of the Isle of Man plants, therefore, does not exclude them from the *E. tatarica* group, if, as appears to me, they agree in other particulars. This name is at present only a suggestion, and further study of more abundant material and of the geographical conditions is necessary to prove whether or no it is tenable."—BUCKNALL. "These plants differ from *E. tatarica* Fisch. in the undermentioned respects:—The hairs on the stem are long; the teeth of the bracts are not aristate; there are no glandular hairs on the corolla or base of calyx; the corolla is small. We think it is *E. curta*, and have thus named specimens from Ramsey and from Helvellyn which agree closely with Mr Wheldon's plants. The plants are unusually hairy, no doubt owing to the habitat."—E. & H. DRABBLE.

E. curta Wetts., var. *glabrescens* Wetts. Hawkshead Moor, Lancs. N., v.-c. 69b, July 20, 1917.—W. H. PEARSALL. "Correct."—E. & H. DRABBLE.

E. curta Wetts., var. *glabrescens* Wetts. High Haulme, Dalton-in-Furness, v.-c. 69b, August 27, 1917.—D. LUMB. "Yes, some of it. Some plants with leaf-serratures more acute, and capsule (nearly ripe) markedly shorter than sepals are, apparently *E. Kerneri*."—WHELDON. "Perhaps correctly named, but the flowers are unusually large. Cf. *E. Kerneri*, forma."—BUCKNALL. "Correct."—E. & H. DRABBLE, SALMON, and MARSHALL.

E. brevipila B. & G. [155a]. Dolgelley, Merioneth, v.-c. 48, August 9, 1915. Fide C. Bucknall. Sent for comparison with No. 276.—W. C. Barton. "Unquestionably."—Marshall.

E. nemorosa H. Mart. [147]. Wet ground, Arthog, Merioneth v.-c. 48, August 5, 1915. Det. C. Bucknall. The rigid and regular branching of some of these specimens is unlike anything in my herbarium, and the bracts are more deeply divided than usual. —W. C. Barton. "Yes."—Wheldon.

E. nemorosa H. Mart. [270]. Simple form, roadside. Southern Wood, Brendon, Devon N., September 1, 1917.—W. C. Barton. "Correct."—E. & H. Drabble.

Euphrasia ——? [1378]. Roadside, White Colne, Essex N., v.-c. 19, September 16, 1915.—G. C. Brown. "Weak specimens of *E. nemorosa* H. Mart., I believe."—Bucknall.

E. nemorosa H. Mart. Near Tydyn-y-Gwynt, Rhyd-y-Mwyn, v.-c. 51, August 21, 1916.—C. Waterfall. "Cf. var. *ciliata* of *E. curta*. I have never seen type *nemorosa* with calyx ribs and margins so densely covered with white hairs."—Wheldon. "Yes, *nemorosa*."—Bucknall. "A strong, many-branched form of *nemorosa*."—Marshall. "*Nemorosa*, var. *ciliata*:"—E. & H. Drabble.

Euphrasia ——? Old quarries near Afonwen, Flintshire, August 25, 1916.—C. Waterfall. "*E. nemorosa*."—Bucknall. "*Nemorosa*, var. *ciliata*."—E. & H. Drabble.

E. campestris Jord., var. *neglecta* Bucknall. [276]. Rough, hilly pacture (with *nemorosa*), Brendon, Devon N., v.-c. 4, September 1, 1917. Det. C. Bucknall. I sent this to Mr Bucknall, queried *brevipila*, as the growth differed from any I had seen before, and was similar to *nemorosa*, which grew with it. Only these two forms occurred in the field. Two specimens were much nearer to *nemorosa* than those now distributed, but with the same short-stalked glands.—W. C. Barton. "We fully agree with Mr Pearsall in regarding this plant as 'a huge robust *brevipila*.' It is quite unlike Jordan's *campestris* and cannot be a variety of that species."—E. & H. Drabble.

E. gracilis Fr. [360]. Chalk Heath, South Pickenham, v.-c. 28, August 16, 1917.—F. Robinson. "Typical *gracilis*."—Marshall. "*E. scottica*. The hairs on the stem are reflexed. The leaves bear marginal hairs, the teeth of the leaves are obtuse. The teeth of the middle and upper bracts are acute or shortly acuminate." —E. & H. Drabble.

E. minima Jacq. [48]. (1) Boggy ground on Catbells, above Derwent Water, v.-c. 70, August 14, 1917. (2) Rocky sheep track, 2000 feet, on Sail, Cumberland, v.-c. 70, August 15, 1917. (3) Wet bogs, Bigland, v.-c. 69b, September 8, 1917.—W. H. PEARSALL. "(1) We think this may pass as *minima*."—E. & H. DRABBLE. "(2) This differs from *E. scottica* in the very obtuse leaves, with few obtuse teeth, which are densely ciliate with minute hairs. Some of the specimens on this sheet, however, do not conform to this description, but they all differ greatly in habit from *E. scottica*."—BUCKNALL. "This seems to be rightly named, and is a most interesting discovery for North Lancashire."—SALMON. "There are two forms on my sheet; the taller, with more acutely toothed bracts, may be var. *variabilis* Rouy. The shorter, with very obtuse teeth, var. *nana* Rouy. So far as can be gathered from dried material, the subforms *bicolor* (Gremli) Rouy and *alba* (Farrat) Rouy are also represented here."—WHELDON. "This is the usual kind of station for *E. scottica*, to which I would rather refer these small plants. Wettstein specially dwells on the close alliance between these two segregates, and Ostenfeld refers *E. scottica* to *E. minima*. Having examined thousands of living *E. scottica*, I prefer to keep it up as distinct. It is mainly a plant of lowland (or subalpine) wet bogs, whereas *E. minima* is, as a rule, quite alpine, with no preference for moist ground."—MARSHALL. "Probably *minima*."—E. & H. DRABBLE.

E. minima Jacq., var. *arbuscula* Bucknall. [47]. Short turf on rocks, Bigland, v.-c. 69b, September 8, 1917.—W. H. PEARSALL. "Yes."—BUCKNALL. "This seems to be what Mr Bucknall calls *minima*, var. *arbuscula*. We feel considerable doubt about its relationship to *minima*."—E. & H. DRABBLE.

E. Kerneri Wetts. [238]. Steep bank of sunken road, Apesdown, Isle of Wight, v.-c. 10, September 15, 1916. I noticed this first in 1912 when its large whitish flowers made a fine show for a space of about fifteen yards. Mr Marshall then wrote :—"These plants are larger and more straggling than any of my herbarium series of *Kerneri*, but they seem nearer to that than any other. I don't know how far *Kerneri* can vary, but I cannot suggest any other name." Flowers showy, 6-8.5 mm. on back. Leaves eglandular, with stiff hairs on margin and nerves of lower surface, shining, dark green; the lowest 13 × 10 mm. The largest plants were 32 cm. (13 inches) high and not drawn up by vegetation. The description in Townsend's Monograph covers these plants except that he gives the length of the corolla as 10-13 mm.; but small-flowered *Kerneri* is now recognised. On the bare down above were growing plants similar to the usual *Kerneri* of the Wiltshire and Surrey Downs. All the plants on the bank were of the same appearance, and I am confident they are not hybrids. Mr Bucknall writes:—" I agree with Mr Marshall that this is unlike ordinary *Kerneri*. The habit is that of *E. nemorosa*, but the flowers are larger and more conspicuous than in that species. I have a similar form from Devonshire and from the Cotswold Hills on oolite." And in *lit.* " The larger-flowered plants like *E. nemorosa* are puzzling, and I cannot yet decide as to whether they should be called *E. Kerneri* or *E. nemorosa* with large flowers." Also [273] a few sheets for comparison. Mr Bucknall names these *E. Kerneri*. The largest plant was 33 cm. high.—W. C. BARTON. " *E. Kerneri* [238]. A luxuriant form, with very patent branches." —MARSHALL. " Yes."—WHELDON. " It is difficult to say whether this should be placed with *E. nemorosa*, of which it has the habit, as a large-flowered form, or with *E. Kerneri*. The short corolla-tube is against the latter determination. See remarks on pp. 25 and 26 of my ' *Revision*,' "—BUCKNALL. " *Kerneri*."—E. & H. DRABBLE.

E. Kerneri Wetts. ? [369]. Chalk pit, Saham Toney, v.-c. 28, September 22, 1917.—F. ROBINSON. " Yes, all but one plant, which I should refer to *E. nemorosa*."—WHELDON. " There is, I think, a mixture here. One of my specimens appears to be *E. curta*, var. *glabrescens;* the rest I should rather refer to *E. nemorosa*. Not very well selected or prepared."—MARSHALL. " Probably a small form of *E. Kerneri* Wettst."—BUCKNALL. " This comes under *Kerneri* as we understand it in this country at present."—E. & H. DRABBLE.

E. Kerneri Wetts. Mouzell, Dalton-in-Furness, Lancs. N., September 1, 1917.—W. H. PEARSALL. " Yes."—WHELDON, MARSHALL, BUCKNALL, and E. & H. DRABBLE.

Euphrasia —— ? [366]. Heathland, Little Ellingham, v.-c. 28, September 10, 1917.—F. ROBINSON. " *E. Kerneri*."—BUCKNALL and E. & H. DRABBLE.

E. Kerneri Wetts. [273]. Brendon, Devon N., August 10, 1917.—W. C. BARTON. " Apparently *Kerneri*, but it is not typical."—E. & H. DRABBLE.

E. Rostkoviana Hayne. (1) [155b]. Dolgelley, Merioneth, v.-c. 48, August 9, 1915. (2) [151]. Arthog, 800 feet, Merioneth, August 5, 1915. (3) [257]. Badgeworthy Water, among long grass, September 8, 1917. (4) [261]. Kipscombe Hill, 1000 feet, Countisbury, Devon N., September 7, 1917. [151], [155b], and [257] are sent for comparison with *E. fennica*, [277].—W. C. BARTON. (1) " Yes."—WHELDON, MARSHALL, SALMON, BUCKNALL, and E. & H. DRABBLE. (2) " We think this is not *Rostkoviana*: an identification at present would be insecure."—E. & H. DRABBLE. (3) " This sheet has very weak specimens with small flowers, and is perhaps *E. fennica* rather than *Rostkoviana*."—BUCKNALL. (3 and 4) "*E. Rostkoviana*."—E. & H. DRABBLE. (4) "I have a similar dwarf, small-flowered form from Savernake Forest, Wilts N.; also from the Brendon Hills, Somerset S. (Wolley-Dod)."—MARSHALL.

E. fennica Kihlman. [277]. Above Myrtleberry Cleave, East Lyn Valley, 800 feet, Devon N., v.-c. 4, August 21, 1917. Mr Bucknall and Mr Druce assent. Quite distinct in appearance when fresh from *Rostkoviana*, of which at first I thought it a variety, and still think the differences insufficient to constitute a species. On this slope no other form occurred, whether in the open or among bracken. But I found plants which Mr Bucknall agrees must go to *fennica* in several stations within a few miles (one on the Somerset side of the River Lyn), generally in company with *Rostkoviana* and *nemorosa*. Mr Druce's station, I understand, was on the southern side of Exmoor in Somerset. N.C.R.—W. C. BARTON. "I have not a description at hand. These, though apparently conspecific with Mr Druce's Exmoor specimens (which he kindly lent me a few years ago), are far weaker, and might well pass for small *E. Rostkoviana*. The following note was made on them at that time :—'A stout, erect plant, 6 to 12 inches high. Stem simple, or with few, erect branches. Leaves and bracts hairy (the latter mostly aristate); glands like *Rostkoviana*. Corolla small; tube hardly exserted. They look very distinct.'"—MARSHALL. "I agree with Mr Barton that *E. fennica* is very near to *E. Rostkoviana*, only differing from it in the stem being simple, or nearly so, and in the smaller flowers."—BUCKNALL. "We are not prepared to deal with *E. fennica* Kairamo at present."—E. & H. DRABBLE.

Euphrasia ——? [363]. Roadside, Rocklands, v.-c. 28, September 3, 1917.—F. ROBINSON. "Weak form of *E. nemorosa* H. Mart. I cannot detect any glands on this."—BUCKNALL. "Slender, drawn-out states of *E. curta*, var. *glabrescens*, I think."—MARSHALL. "Very few stalked glands are present. It is *campestris* Jord., but rather poorly developed."—E. & H. DRABBLE.

Euphrasia ——? [362]. Sandy heath, Garboldisham, v.-c. 28, February 1, 1917 (sic)—F. ROBINSON. "*E. gracilis* Fr."—BUCKNALL. "*E. curta*, var. *glabrescens*. It is very much attenuated and the bracts are very small."—E. & H. DRABBLE.

Rhinanthus major Ehrh. × *minor* Ehrh. (× *R. fallax*) ? [4252]. Damp pasture, Laggan Bridge, Inverness E., v.-c. 96, July 24, 1916. This seemed fairly intermediate in habit, appearance, and character; but I am not at all sure about its being the hybrid, though it agrees fairly well with Sterneck's description of his × *Alectorolophus fallax* (*A. minor*, var. *fallax* Wimm. & Grab.). If not that, it may be *R. stenophyllus.* Stems black-striolate. Bracts pale green. Appendage of upper lip usually more patent than in *R. minor.*—E. S. Marshall. "This is *R. Crista-galli* L., f. *vittulatus* (Gremli) mihi tantum videtur."—Thellung. "I see no evidence in the flowers of *major.*"—Druce.

Melampyrum arvense L. Near St Lawrence, Isle of Wight, August 1917. Coll. J. Green; comm. G. C. Druce.

Orobanche major L. Wilstone, Wilts, July 1917.—G. C. Druce.

Mentha longifolia Huds. (= *M. sylvestris* L.). Bank of Chew, Compton Dando, Som. N., August 4, 1896. Coll. D. Fry; comm. J. W. White.

M. sylvestris L. Bank of Avon above Bristol, September 2, 1890. —J. W. White.

M. longifolia Huds., var. *mollissima* (Barck.). A large bed, where it has been noticed for fifty years, in old lane near Baildon, v.-c. 64, August 8, 1917.—J. Cryer. "Apparently this; but I have no undoubted specimen of the variety."—Marshall. "This beautiful plant differs from the commoner form in having a short dense whitish tomentum on leaves, stem, &c., which gives the whole plant a greyish tone. I believe it has passed before as *mollissima*, but I have seen no types, and synonymy is confusing."—Salmon. "Nearest var. *sapida* (Tausch) Briquet. See *Rep. B.E.C.* 332, 1913."—Druce.

M. piperita L. By the Tweed, near Galashiels, Roxburgh, September 19, 1917. N.C.R. In the adjacent county of Peebles it has much the look of a native plant as it grows alongside the small burns among the hills.—G. C. Druce. "This would come under *officinalis* Hull—the usual form."—Salmon.

M. subglabra Baker, ? forma. By a small creek of the Rea Brook, Meole Brace, Shrewsbury, Salop, August 24, 1917. It assimilates, occasionally, both *M. rubra* and *M. gentilis*, the former in colour, the latter in foliage. It does not agree with a Warwickshire specimen I have, so authenticated by Mr J. G. Baker himself, this specimen having much broader foliage and capitate inflorescence. —J. C. Melvill. "A glabrescent *M. aquatica* × *arvensis*, which may come under × *M. sativa* L., var. *subglabra* Baker."—Marshall. "× *M. verticillata*, var. *subglabra* (Baker)."—Druce. "Yes, I believe this comes under Baker's var. *subglabra*. Mr Melvill kindly sent me a fresh specimen last summer, and it had, quite distinctly, the scent of *M. aquatica*, so different to that of any *gentilis* or *rubra* forms."—SALMON.

× *M. verticillata* Huds. Beechamwell Fen, Norfolk W., v.-c. 28, July 30, 1917. Coll. J. E. L. & Anna Luddington. Nicholson (*Flora of Norfolk*) speaks of *M. verticillata* as being scarce in that county.—J. E. LITTLE. "Yes. *M. aquatica* × *arvensis*; the state coming under *rivalis*."—SALMON.

M. aquatica × *arvensis*, var. [364]. Ditch, Woodrising, v.-c. 28, September 6, 1917.—F. ROBINSON. "Under × *M. verticillata* L., var. *paludosa* (Sole), but it is nearer to var. *subspicata* Beck., which I have also from Devon, Brecon, and Derry."—DRUCE. "Yes, this hybrid, but my specimen cannot be called either typical *rivalis* or typical *paludosa*—an intermediate state."—SALMON.

M. rubra Sm. [368]. By rivulet, Sturston, v.-c. 28, September 15, 1917.—F. ROBINSON. "Yes."—DRUCE.

M. arvensis L., var. [365]. Little Ellingham, v.-c. 28, September 10, 1917. [367]. Heathland, Stow Bedon, v.-c. 28, September 15, 1917.—F. ROBINSON. [365]. "I have nothing which quite matches this; but it may be a small form of var. *praecox* (Sole). The calyx-teeth are right for that, as is the scanty pubescence."—MARSHALL. "I think this pretty mint may be a small state of *parietariæfolia* Beck."—SALMON. [367]. "Nearest to var. *Nummularia* (Schreb.), but not quite that plant."—DRUCE. "Agrees in some points (small rounded lower leaves, &c.) with the description of *M. Nummularia* (Schreb.)."—SALMON.

Calamintha Nepeta Savi. [370]. Hedgebank, Saham Toney, v.-c. 28, September 22, 1917.—F. ROBINSON. "Yes, *Satureia Nepeta* Scheele, with the corollas well shown."—DRUCE.

Salvia pratensis L. Orig., Rogiet, v.-c. 35; cult. Wigginton. Sent as far as possible in pairs to illustrate the note in *Rep. B.E.C.*, 426, 1916. On the whole, I regard it as very probably introduced at Rogiet. When I first saw it there some years ago there was one clump only consisting of a mixture of the two forms and a very few scattered single plants. A year or two ago the large mixed clump was still there, and a very large number of small clumps and isolated plants had been formed. The species is spreading rapidly in this locality. If it was not recently introduced, there seems no accounting for the fact that the field has not always been covered with it.—H. J. RIDDELSDELL. "Dr Shoolbred took us to this station. The light blue flowers do not seem to be combined with any marked difference in foliage."—MARSHALL. "Perhaps cultivation has something to do with the remarkable shape of the uppermost pair of leaves on the specimen received—broadly-lanceolate, with petioles c. 1 cm. long. I do not find these features in wild examples from Kent and Surrey, nor have I ever seen native plants bearing pale blue flowers. Rouy (*Fl. Fr.*), however, states that this species has ' corolle bleue, rarement bleuâtre, rose ou blanche.' "—SALMON.

Stachys alpina L. Border of wood above Wotton-under-Edge, Gloster W., June 16, 1917.—J. W. WHITE.

S. palustris L. [300]. Cultivated ground, Brendon, Devon N., August 24, 1917. Plant rigid, yellowish green ; stem with stiff hairs ± deflexed.—W. C. BARTON. " Nothing untypical about this, when dry, so far as I can see."—MARSHALL. " Verging towards var. *canescens* Lange."—DRUCE.

S. ambigua Sm. Tyndrum, Perthshire, August 20, 1917.—R. J. BURDON. " Yes, rather on the *palustris* side. We have seen it in that neighbourhood."—MARSHALL and DRUCE.

Lamium intermedium Fries. Weed in garden, Grey Abbey, Co. Down, October 1917. This is a common weed of cultivated ground in Co. Down. The specimens sent correspond to some so named by S. A. Stewart, who says, in his *Flora of N. E. Ireland*, it is frequent in Co. Down and Antrim. I am not sure if they are correctly named —they may be *L. hybridum* ? I would like to be sure.—C. H. WADDELL. " My specimen of this gathering is a remarkably strong large-leaved *L. hybridum* Vill."—MARSHALL. " I cannot see the hairs in tube which *intermedium* should possess ; neither do the calyx-teeth seem right for that. Is not Mr Waddell's plant luxuriant *L. hybridum* growing in rich soil ? "—SALMON. " The specimens sent by Mr Waddell appeared to me to be *L. hybridum.*"—BRITTON.

Plantago lanceolata L., var *sphaerostachya* M. & K. [321]. Hillside track, Willsham, near Countisbury, Devon N., August 12, 1917.—W. C. BARTON. " Yes, but it is scarcely a true variety and reverts in culture."—DRUCE.

P. major L., var. *nana* Tratt. [325]. Cart track on Countisbury Common at 1000 feet, Devon N., v.-c. 4, September 13, 1917. The only form in the near neighbourhood. Trattinick, *Arch. der Gewächskunde* t. 42 (not 23 as Rouy states) gives two figures ' one of the largest and one of the smallest plants.' The larger depicts a plant of diam. 9 cm. with leaves 2 cm. broad and 5-nerved, spikes 1¾-2 cm. long ; the smaller, a plant of diam. 2¾ cm. with leaves 1½ cm. long and 3-nerved, spikes ½-1 cm. long. My gathering exactly covers this range, except that a few are smaller in spike and leaf than his smaller figure. According to description and habitat my smallest specimens might come under var. *microstachya* Wallroth Sched. Crit. * but the specimen in *Herb. J. Gay* at Kew sent by Wallroth himself is quite different in appearance, resembling a reduced form of var. *agrestis* Fries. On the other hand Wallroth's own specimen of his var. *brachystachya* (for which he gives *minima* DC. as synonym) in *Herb. Gay* is very similar in general appearance, but that is a plant of wet ground (cp. Williams *Prodromus* 355, *P. uliginosa* F. W. Schmidt as a species). The plants sent to the other club in 1916 by the Rev. H. J. Riddelsdell are, I believe, identical. * 'Foliis ovatis depressis minutissimis, scapo illa subaequante brevissimo declinato, spica ovata depauperata ex flosculis 4-5 composita. Planta ex hoc genere minima.'—W. C. BARTON. "De Candolle (*Prodromus* xiii., 1, 695) makes *P. nana* Tratt. and *P. minima* DC. Fl. France synonyms of ε. *minima* DC., but describes the leaves as glabrous; they are very hairy beneath and fairly so above in these specimens. The altitude and a poor soil combined would tend to diminish the size and increase the pubescence; and I doubt whether this is more than a depauperate state of *P. intermedia* DC."—MARSHALL.

Amaranthus retroflexus L. Waste ground, Bradford, August 20, 1917.—J. CRYER. "Young, but doubtless right."—MARSHALL.

A. chlorostachys Willd., var. *aristulatus* Thell. In abundance on waste ground in three separate stations, Bradford. Also at Meanwood, Leeds, v.-c. 64, August 29, 1917.—J. CRYER. "This must be a misplaced label. The plant is a form of *A. Thunbergi*."—DRUCE.

Chenopodium rubrum L. Sands by sea-shore, Ballywalter, Co. Down, September 1917.—C. H. WADDELL. "Yes."—DRUCE.

C. murale L. Waste ground, Bradford, v.-c. 64, August 5, 1917. —J. CRYER. "Yes."—DRUCE. "Yes, near sub-var. *microphyllum* Coss. et Germ."—PEARSALL.

C. opulifolium Schrad., var. *betulifolium*. Waste ground, Billingshurst, Sussex, August 31, 1917.—A. WEBSTER. "*C. opulifolium* Schrad."—THELLUNG.

C. striatum × *album* (= *C. pseudostriatum* Zschacke). Botley, Oxon, September 1917. On waste ground growing with both parents. This rather handsome plant had brilliant crimson-red striae on the stems under the nodes, which make it very conspicuous. Unfortunately these specimens cannot now be submitted to Dr J. Murr, so that one is a little timorous in giving a positive name.—G. C. DRUCE.

C. leptophyllum Nutt. [333]. Army camping ground, Thetford, v.-c. 28, October 26, 1916.—F. Robinson. "Yes."—Druce.

C. leptophyllum Nutt. Waste ground, Billingshurst, August 4, 1917.—A. Webster. "*C. album*, var. *leptophyllum* Moquin. Perianth segments strongly carinate."—Pearsall. "*Leptophyllum*, a good species."—Druce.

C. hircinum Schrad. Waste ground, Bradford, v.-c. 64, September 12, 1917. In great abundance.—J. Cryer. "Yes."—Druce.

C. hircinum Schrad. Waste ground, Bradford, v.-c. 64, August 25, 1917. Probably var. *subtrilobum*.—J. Cryer. "Var. *subtrilobum*."—Druce.

C. polyspermum L., var. *cymosum* Moquin. [358]. Watton, v.-c. 28, August 12, 1917.—F. Robinson. "Type, not var."—Pearsall. "Near type; i.e., var. *acutifolium* Gand."—Druce.

C. ambrosioides L. Waste ground, Bradford, v.-c. 64, September 13, 1917.—J. Cryer. "Yes."—Druce and Thellung.

C. Botrys L. Waste ground, Bradford, v.-c 64, September 4, 1917.—J. Cryer. "Yes."—Druce.

Atriplex laciniata L. Sands by shore, Ballywalter, Co. Down, September 1917.—C. H. Waddell. "Yes, of British authors, but *laciniata* L. is restricted to a different species. The name suggested in *Camb. Fl.* is antedated by *A. maritima* Hallier, which this plant should be strictly called."—Druce.

Salicornia herbacea L., f. *stricta* Moss & Salisbury. [311a]. Tidal mud, Yarmouth, Isle of Wight, v.-c. 10, September 15, 1916. Teste E. J. Salisbury.—W. C. Barton.

S. ramosissima Woods. [312A-D]. Mud on salt fallows, Brading Harbour, Isle of Wight, v.-c. 10, September 8, 1916. Dr Salisbury comments:—'All these appear to be quite good *S. ramosissima*. A and D well illustrate the normal range of variation in habit of the larger specimens.'—W. C. Barton. "I agree. This species varies greatly in habit."—Marshall.

Polygonum amphibium L., var. *terrestre* Leers. [1879]. Cultivated ground, Ham, Surrey, August 21, 1917.—C. E. Britton. "Excellent material; this is the land-form but not a true variety."—Marshall.

P. aviculare L., var. *rurivagum* (Jord.). On gravel drive, Grey Abbey Rectory, Co. Down, August 27, 1917.—C. H. WADDELL. "So I should name it."—MARSHALL. "I believe that this is a small form of *P. heterophyllum* Lindm., var *angustissimum* Lindm. rather than Jordan's *rurivagum*."—SALMON.

Rumex limosus Thuill. [371]. Mud by edge of lake, Scoulton Mere, v.-c. 28, September 27, 1917.—F. ROBINSON. "Tubercles much too small for that; it is *R. maritimus* L."—MARSHALL and SALMON. "All the plants sent by Mr Robinson under [371] seemed to me to be *R. maritimus*."—BRITTON.

R. Brownii Campd. Waste ground, Bradford, v.-c. 64, September 11, 1917. Also at Meanwood, Leeds.—J. CRYER. "Yes, one of the few Australian species which may become naturalised in Britain."—DRUCE.

Euphorbia hiberna L. [308]. Wood on east side of Badgeworthy Water, Somerset S. (I believe the only recorded locality in the county), September 4, 1917.—W. C. BARTON.

E. coralloides L. Slinfold, Sussex, June 23, 1917.—R. J. BURDON.

E. Esula L. Whyke gravel pit, Chichester, June 6, 1917.—R. J. BURDON.

E. Esula L., var. *pseudo-Cyparissias* (Jord.). Waste ground near Helsby Station, Cheshire, August 12, 1916.—C. WATERFALL. "No; this is typical *E. Esula*. Jordan's *E. pseudo-Cyparissias* is quite different."—MARSHALL.

Ulmus nitens Moench. Windmill Hill, Hitchin, Herts, May and June 1916; April, May, and June 1917.—J. E. LITTLE. "*U. nitens* Moench."—HENRY. "I consider this to be the Huntingdon elm × *U. vegeta* Lindley, but mature foliage is desirable."—JACKSON.

U. vegeta Lindley. Stansteadbury, Herts, June 12, 1915. Det. A. B. Jackson.—J. E. LITTLE. "*U. vegeta*."—HENRY.

U. minor (? Miller) Reichb. Roadside, Long Whatton, Leicester, July 22, 1917.—A. B. JACKSON and T. E. ROUTH. "*U. nitens* Moench, var. This does not agree with *U. minor* Reichb., in my opinion."—HENRY.

Urtica dioica L., var. *microphylla* Hausm. [282]. Coombe Farm, Brendon, Devon N., v.-c. 4, September 9, 1917. A number of plants all similar, about 3 feet high, on garden refuse where growth was luxuriant. All leaves were as shown in the specimens. A useful note on the small leaved forms of *U. dioica* appeared in *Rep. B.E.C.* 184, 1905.—W. C. BARTON. "Yes, these are rather subvars. or forms than good varieties."—DRUCE and MARSHALL.

U. dioica L., var. *angustifolia* Wimm. & Grab. [281]. Roadside, Brendon, Devon N., v.-c. 4, August 25, 1917. Growing among the type under the same conditions. In some plants a few of the lower leaves were broad and cordate as in the type.—W. C. BARTON. "Yes."—DRUCE. "Under that; leaves small, so that it approaches var. *microphylla*."—MARSHALL.

Betula ——? [2951]. Root from swampy, peaty ground at about 2800 feet, descending from the Lochnagar plateau towards the Dhu Loch, Aberdeen S., v.-c. 92, July 1906. Garden, West Monkton, May 21, 1917. When growing wild this was a very small, creeping-rooting shrub, less than six inches high, with foliage quite intermediate in outline between *B. nana* and *B. pubescens*, but remarkably hairy. After eleven years it has grown into a strong bush nearly six feet in height, but has produced no catkins. The leaves now closely resemble those of *B. pubescens*, var. *microphylla*; but I have never observed that species above 2500 feet in Scotland. I still think that it may be a hybrid with *B. nana*, though very much nearer to *B. pubescens*.—E. S. MARSHALL. "*B. pubescens* Ehrh."—HENRY.

Salix alba L., var. *vitellina* (L.). Border of rhine, Pilning, Gloster W., May 5 and July 19, 1917.—IDA M. ROPER. "Leaves too large for this, I think; seems nearer var. *cœrulea* Sm."—PEARSALL. "Probably correct, as the last year's bark is shining, and of the right colour. Mr Linton does not seem to have seen the male plant."—MARSHALL. "*S. alba*, no doubt, but not very good for *S. vitellina*; the leaves seem to be too persistently pubescent."—LINTON.

S. triandra L., var. *Hoffmanniana* (Sm.). Bank of Chew, Chewton Keynsham, Somerset N., May 12 and July 21, 1917.—IDA M. ROPER. "Certainly not this, nor any form of pure *S. triandra*. Much nearer to *S. fragilis*; but I believe it to be *S. fragilis* × *triandra* (*S. alopecuroides* Tausch)."—MARSHALL. "Not this; ls. much too long, not rounded below; fls. have only 2 stamens. Is *S. fragilis* L."—PEARSALL. "*S. triandra* fairly typical, with no leaning towards *S. Hoffmanniana*."—LINTON.

Salix ——? Kidlington, Oxon, May 1917.—G. C. DRUCE. "*S. viridis* Fr. (*S. alba* × *fragilis*)."—LINTON.

× *S. rubra* Huds. Leaves only. Tweedside, Galashiels, Selkirk, September 1917.—G. C. DRUCE. "Yes, a form of this (*S. purpurea* × *viminalis*) with very narrow, parallel-sided leaves."—MARSHALL. "A good foliage specimen of *S. rubra* Huds."—LINTON.

S. viminalis ? × ——? Abingdon, Berks, September 1917.—G. C. DRUCE. "Poor specimens (leaves only) of *S. cinerea* × *viminalis*."—LINTON. "A gathering in 1918 convinced me it is *viminalis* × *aurita*."—DRUCE.

S. Caprea × *cinerea* = *S. Reichardti* A. Kern. (1) Roadside, Coalpit Heath, Gloster W., April 28 and June 23, 1917. (2) Engine Common, Rangeworthy, Gloster W., April 30 and June 25, 1917.—IDA M. ROPER. (1) "*Caprea* is certainly one of the parents, but is not *aurita* also present? "—DRUCE. "I can see no trace of *S. cinerea* here. Possibly a *S. aurita* × *Caprea*, much nearer to *Caprea*; but more probably a form of *S. Caprea*."—MARSHALL. "*S. aurita* × *Caprea*; that is all that is certain; but it is possible that there may be *S. cinerea* in it as well."—LINTON. (2) "The leaves show no influence of *S. cinerea*; there is some favourable evidence in the slender catkins and capsules, and in the darkish, puberulous bark of the last year's wood, but I think that it is only a slight modification of *S. Caprea*."—MARSHALL. "I should prefer to name this *S. aurita* × *Caprea*."—LINTON.

S. aurita L. Birchwood Lane, Pensford, Som. N., May 3 and September 10, 1917.—IDA M. ROPER. "I agree."—LINTON.

Populus canescens Sm. Kidlington, Oxon, May 1917. Young shoots (*alba*-like).—G. C. DRUCE. "Yes."—HENRY.

P. deltoidea Marsh. × *nigra* L. ? South-east corner of Tingley Wood, Herts, May 3 and June 12, 1917.—J. E. LITTLE and R. MORSE. "Better specimens of foliage necessary to determine whether it is one or other of the two planted female hybrid poplars, *P. regenerata* Schreider or *P. marilandica* Bosc. See *Rep. B.E.C.* 209, 1915."—HENRY. "This closely resembles specimens I have from a tree (since beheaded) near Turnham Green Station which I originally (see *Rep. B.E.C.* 126, 1911) called *P. nigra*, but which Moss and Henry considered to be *P. deltoidea* × *nigra*, Henry naming it *P. Lloydii* (see Elwes and Henry, *Trees of Great Britain* vii., 1831, 1913). Mr Little showed me this Tingley Wood tree in July 1916, and I was then unable to name it definitely. It appears to differ only from *P. Lloydii* in its glabrous shoots. It is not *P. marilandica* which Henry considers to be the *P. canadensis* of German dendrologists, as that has more prominent leaf serratures. I hope to give a further report on the Hertfordshire tree at a later date."—JACKSON.

Helleborine violacea Druce. Woods by the road between West Wycombe and Stokenchurch, Bucks and Oxon, August 1917. Careful examination on the spot showed that the *Helleborine* was of one type only in these different localities, and I put it with some hesitation under *H. violacea.* It is clearly not *H. atroviridis* (W. R. Linton). The foliage and clustered habit at once separate it from that species, though the "bunches" closely resemble those of *atroviridis.* The stems were sometimes solitary but usually clustered (20-30 from a root); label broadly triangular-cordate, point almost always recurved; fl. white or purplish.—H. J. RIDDELSDELL. "Yes, the more correct name is *H. purpurata* (Sm.) Druce. Smith well described it, and his immature spec. preserved at the Linn. Soc. is certainly this plant."—DRUCE, BENNETT, MARSHALL, and SALMON.

Orchis incarnata L. (*vera*). [229a and 229b]. Marshy ground of fen, Mildenhall, Suffolk W., v.-c. 26, June 9, 1916. In [229b] the lateral margins of lip somewhat less reflexed than in [229a] and the marking darker; the whole flower suffused with rose-purple. Mr Druce tells me he is familiar with this form in a number of localities. [229a] corresponded closely with the description in *Rep. B.E.C.* 339. 1913.—W. C. BARTON. "Yes."—DRUCE. [229b]. "Yes. The colour is very variable; sometimes the flesh-coloured form occurs alone; at others, the dark or medium purple one alone; or every gradation may be found, as in meadows near Christchurch, Hants S., without any marked structural modification. Near Fleet Pond, Hants N., and doubtless elsewhere, a white-blossomed form is locally plentiful."—MARSHALL.

O. incarnata × *praetermissa.* [229c]. Marshy ground of fen, Mildenhall, Suffolk W., v.-c. 26, June 9, 1916. Flowers dark or light purple, much nearer to those of *praetermissa*, but the lateral margins somewhat reflexed.—W. C. BARTON. "The influence of *O. incarnata* is marked even in a dry state."—MARSHALL. "Yes, this seems to be the hybrid. It is much less frequent than *praetermissa* × *Fuchsii* or × *maculata.*"—DRUCE.

O. praetermissa Druce. (1) Mundham, Sussex W., July 1917.—G. C. DRUCE and R. J. BURDON. (2) Near Wool, Dorset, June 1917. See *Rep. B.E.C.* 155. 1917.—G. C. DRUCE.

O. praetermissa Druce. Max Bog, Winscombe, Somerset N., v.-c. 6, June 27, 1917.—IDA M. ROPER. "Yes."—DRUCE.

O. praetermissa Druce. [229d]. Marshy ground of fen, Mildenhall, Suffolk W., v.-c. 26, June 9, 1916. All under this number from one marshy field where in addition to those now sent I found *O. Fuchsii* Druce and the hybrid *O. Fuchsii* Druce × *praeter-*

missa Druce which I agree with Mr Druce is the form usually named *O. latifolia* in this country. The plants were sorted fresh when the characters were easily distinguished. All forms varied much in size and in width of leaf, a character which I believe to be of no diagnostic value; and it is worth noting that all were gathered on the same day. —W. C. Barton. " Yes, excellent specimens."—Druce.

O. praetermissa × *maculata*. Meadow about a mile from the canal near Chichester, Sussex W., July 1917. Growing with both species. Some of the specimens were remarkably luxuriant, reaching nearly a metre. See *Rep. B.E.C.* 154, 1917.—G. C. Druce.

Ophrys sphegodes Mill. Near Swanage, Dorset, May 1917.—G. C. Druce.

Habenaria viridis Br. Slag heaps at Minerva Lime Works, Denbighshire, June 16, 1917.—C. Waterfall.

H. viridis Br., var. *bracteata* A. Gray. Yarnton, Oxon, June 1917.—G. C. Druce.

Romulea Columnae Seb. & Maur. Petit Bot Cliffs, Guernsey, April 1913.—C. V. B. Marquand. " The suggested name, *R. parviflora*, for this species is, Mr Williams tells me, untenable."—Druce.

Ruscus aculeatus L. Shiphay Lanes, near Torquay, April 3, 1917.—C. Waterfall.

Allium Scorodoprasum L. Banks of Trent, Gainsborough, Lincs. N., July 10, 1917.—A. Webster.

A. vineale L., var. Hurst, Berks., July 1917. A bicephalous form.—G. C. Druce. " Var. *compactum* (Thuill.); in my plant there are twin heads."—Marshall.

A. triquetrum L. Guernsey, April 1913.—C. V. B. Marquand.

A. oleraceum L. Meadow above Long Ashton, Bristol, Somerset N., July 30, 1917.—Ida M. Roper.

Ornithogalum nutans L. [340]. Woods (both wet and dry), Bodney, v.-c. 28, May 15, 1917.—F. Robinson.

Gagea lutea Ker-Gawler. Woods, &c., Balsaddle Wood, v.-c. 32, April 28, 1917. Rare in Northants.—G. Chester.

Narthecium ossifragum Huds. Roydon Common, near King's Lynn, v.-c. 28, October 2, 1917.—F. Robinson.

Juncus glaucus Ehrh. × *effusus* L. Near Epsom Common, Surrey, September 9, 1916. This form of the hybrid, close to *glaucus*, is likely to be often overlooked, as, except for its continuous pith and blunt mucronate capsule, it has much of the colouring and general facies of that species. A few of the capsules are inclined to be acuminate, but on the same panicle may be seen the typical ones of "*diffusus*." Syme (*E.B.* ed. 3), says that the seeds are abortive, but these Epsom specimens appear to possess plenty of good seed, extremely like those of *glaucus*, but a little paler in colour.—C. E. SALMON. "Seems right, though to all appearance fertile, as are some of my own plants, passed by Mr Bennett. A small form of the hybrid."—MARSHALL.

J. tenuis Willd. Footpath, High Bentham, York Mid-West, v.-c. 61, August 1917.—A. WILSON. "Yes, is not this an addition to v.-c. 61?"—SALMON. "Now on record for 31 counties and vice counties. I have specimens from 19 of these."—BENNETT.

J. tenuis Willd. By an old track beside the Soldiers' Camp at Barry, v.-c. 90, October 6, 1917. Coll. Mrs WEDGWOOD. The only previous records for this plant in Forfar are those of G. Don and D. Don. They recorded it as found by a rivulet in marshy ground among the mountains of Clova near their summits.—R. & M. CORSTORPHINE. "I am a little sceptical about the identity of Don's plant with *tenuis*, but will report later."—DRUCE.

Luzula sylvatica Gaud. Headley, Surrey, May 31, 1917. Some members may not possess examples from this county, where it is decidedly scarce. These specimens are from the single station recorded in Brewer's *Flora* (1863), but it is now known in some half-dozen localities in the county.—C. E. SALMON.

L. multiflora DC. Alpine form or state at 2500 feet, Coire nan Gall, Laggan, Inverness W., v.-c. 97, July 28, 1916.—E. S. MARSHALL. "I am well acquainted with this handsome form on the Scottish hills: it may be worth distinguishing as a form."—DRUCE. "Habit of var. *alpinus* (Hoppe), var. *nivalis* Rich., but more open in flower."—BENNETT.

Arum italicum Mill. ? Near Druce, Dorset, May 1917. Lieut. C. Marquand who was with me when I gathered it last May agreed that it was the same as the Guernsey *italicum* (with which he was well acquainted) without the white veins to the leaves, which make the true plant so conspicuous. Ordinary *A. maculatum* also grew in the same area. One would be glad to have members' opinions on this plant, which is not separated from *maculatum* easily.—G. C. DRUCE. "Only *A. maculatum*, I think; leaves thin and inflorescence small."—MARSHALL.

Acorus Calamus L. Canal near Broughton, Cheshire, v.-c. 58, July 28, 1917.—C. WATERFALL.

Sparganium minimum Fr. [354]. Pool on heath-land, Thompson, v.-c. 28, July 19, 1917.—F. ROBINSON.

Potamogeton alpinus Balb. ? × *lucens*. Bendon, Dorset, May 1917. In a locality to which Mr C. B. Green directed me. The plant was then showing no sign of flower. Mr Arth. Bennett kindly examined the set of my gathering (not these identical specimens) and referred them to × *P. decipiens* Nolte, var. *longifolius* Hagström (= × *P. upsaliensis* Tis.). Lieut. T. H. Leach sent me other specimens from the same place in late July, but he was unable to find any fruiting specimens.—G. C. DRUCE. "*P. upsaliensis* Tiselius."—BENNETT.

P. gracilis Wolfg. Loch Moraig near Blair Atholl, East Perth, August 25, 1917. Found by me on 14th August 1916 in Loch Moraig about 2½ miles from Blair Atholl, and identified by Mr Arthur Bennett, who gives a full account in the *Proc. Perthshire Soc. of Nat. Science* vi., iii., p. cxxv. As the Loch was swollen and muddy I had to take the specimens this year from those driven ashore, and I fear they had been rather long uprooted.—W. BARCLAY.

P. pusillus L. Stream flowing into Holywell Bay, v.-c. 1, August 23, 1915. I believe identical with the plant distributed in 1915 by Mr Druce. I send these examples to call attention to the length of the peduncle. Babington's *Manual* says:—" Spikes ½ or ⅔ shorter than the slender ped.," with which our usual Cornish *P. pusillus* agrees; but this, from a rather rapid stream, is different.—F. RILSTONE. " Relative lengths of spikes and peduncles are perhaps sometimes of use locally, but applied to the whole area of the species are valueless. Here, of course, it might be said the stream induces the lengthened peduncles, but longer are produced on a var. of the species on Sable Island off the Canadian Coast, where the plant grows in a lagoon. Still this specimen has some characters that are unusual, such as the lengthened stipules, and the habit of the plant is what Dr Hagström in his recent work (*Critical Researches in Potamogeton*, 1916) calls " stretched," and the spikes are very short, much like the Canadian plant (var. *capitatus*). By description, in which I have little faith, it seems to fall under S. *cuspidatus* Fischer, f. *pauciflora* Fischer. In fact, as Dr Hagström remarks, (*l.c.*) Fischer's descriptions are so involved that it is difficult to follow them, and he considers they are of little account."—BENNETT.

Zannichellia gibberosa Reichb. Wyke, Chichester, Sussex W., July 1917. Locally abundant, a new county record.—G. C. DRUCE. " Yes."—MARSHALL.

Z. maritima Nolte. Kirby-le-Soken, Essex N., June 1917.—G. C. DRUCE. "This agrees well with the description of *Z. pedicellata* Fr. Mantissa i., 18, 1832. Fruits mostly 3 or 4 together, long-pedicelled, but not peduncled, with a membranous border on the back, muricate when fully ripe. According to Rouy, *Fl. de France*, xiii., 299, *Z. maritima* Nolte usually has the carpels in pairs, sessile or subsessile, generally not divaricate."—MARSHALL. "Yes, equals *Z. pedunculata* Reichb., β. *maritima* Nolte, and *Z. palustris* L., var. *pedicellata* Wahl."—SALMON.

Naias flexilis R. & S. Esthwaite Water, v.-c. 69b., July 27, 1917.—W. H. PEARSALL.

Carex riparia Curt. [342]. Wet wood, Thompson, v.-c. 28, May 31, 1917.—F. ROBINSON. "Yes."—MARSHALL.

C. vesicaria L. [352]. Scoulton Mere, v.-c. 28, July 10, 1917. —F. ROBINSON.

C. lasiocarpa Ehrh. [347]. Heath-land, Foulden, v.-c. 28, June 16, 1917.—F. ROBINSON.

C. hirta L. [350]. Watton, v.-c. 28, June 23, 1917.—F. ROBINSON.

C. helodes Link. Broadfield, Berks, May 1917.—G. C. DRUCE.

C. ericetorum Poll. [338]. Chalky heath-land, Elveden, v.-c. 26, May 10, 1917.—F. ROBINSON. "Yes, in excellent condition, showing the beautiful hyaline margins of the glumes."—DRUCE.

C. elongata L. Canal near Billingshurst, Sussex, June 17, 1917. —A. WEBSTER.

C. muricata Linn. Herb. ! (*C. Pairaei* F. Schultz). Mullion, Cornwall W., v.-c. 1., June 25, 1917.—E. S. MARSHALL. "Not the *muricata* of *L. Sp. Pl.*, which has priority."—DRUCE.

C. diandra Schrank, var. *major* Koch = *C. Ehrhartiana* Hoppe. Seaman's Moss Pits near Timperley, Cheshire, v.-c. 58. Collected by the late John Hardy of Manchester in June 1853. A few weeks ago I turned up unexpectedly some examples of this form, collected by Mr Hardy himself, and which may be interesting to the members as coming from this station. During my long residence in Manchester I was never able to meet with the plant on the spot cited. In view of the disappearance of the species from its old station, the examples now sent will be of some interest to the members of the Club.—C.

BAILEY. "Yes, but the variety has been dropped as being not sufficiently well marked. See *Watson B.E.C. Reports* 30, 1900-1901; 22, 1901-1902."—SALMON. "Exactly the figure of *E.B.* ed. 3; but it does not agree at all well with the description, being more slender than the normal form, with smaller, shorter, more compact spikes. Koch *Synopsis* ed. 2, ii., 867, describes his var. *major* (= *C. Ehrhartiana* Hoppe.) as 'duplo saepe altior, radice magis caespitosa, spica crassiore magisque composita.' Rouy says that it is robust, with leaves broader; spike stouter and laxer, sub-panicled. The present plant does not fit these definitions, except in being extraordinarily tall; it looks like a local, attenuated state, probably due to shade or surrounding herbage."—MARSHALL. "Recent investigations have convinced me that some of the plants ex *Herb. John Hardy* sent to the Club this year by Mr C. Bailey are Gibson's *pseudoparadoxa*; that some other plants from Seaman's Moss, named *pseudoparadoxa*, are wrongly named; that the plants themselves and the whole discussion in the *Phytologist* settle the position of Gibson's plant between 2618 and 2620 in Mr Druce's *List*; that the Rescobie plant belongs to *paniculata* and is quite distinct from *pseudoparadoxa* in stem, perigynium and nut. In the two characters last-mentioned some of the Seaman's Moss plants are markedly distinct, but further investigation may prove that both *diandra* and the var. *Ehrhartiana* exhibit the same extremes."—LUMB. "The above note by Mr Lumb, for which we are greatly indebted, has been made after a most careful microscopical examination of all available specimens, including those in Mr Gibson's Herbarium at Halifax. From this it will be seen that Gibson's *pseudoparadoxa* has nothing to do with *paniculata*, and that the Rescobie plants do not belong to it. Kükenthal (*Pflanzen.*) and Ascherson & Graebn. (*Syn.*) are both wrong in placing Gibson's plant as a variety of *paniculata*; they may have been misled by wrongly labelled plants. Unfortunately I followed them in *The British Plant List*; subsequently I felt doubtful, so I did not include the variety in Hayward's *Pocket Book*. As Mr Lumb says its alliance is with *diandra* and *paradoxa*. Syme (*E. B.* x., 88) it will be remembered put it under the former species, making it synonymous with *Ehrhartiana* (*major*), but the two plants are not identical, and it may be found well to retain both names. We hope Mr Lumb will supply further details to clear up this point."—DRUCE.

C. arenaria L., f. *remota* (Marss.). Abundant on Coates Common, Sussex W., June 23, 1917.—C. E. SALMON.

C. dioica L. Carbrook Fen, v.-c. 28, June 2, 1917.—F. ROBINSON.

Panicum Crus-galli L. Waste ground, Bradford, v.-c. 64, September 27, 1917.—J. CRYER.

Panicum ——? Waste ground, Bradford, v.-c. 64, September 28, 1917.—J. CRYER. "*P. laevifolium* Hackel, var. *amboënse* Hackel, Afr., Austr., adv. in Gall., Helv., Germ. New to our list."—THELLUNG.

P. miliaceum L. [335]. Army camping ground, Thetford, v.-c. 28, October 27, 1917.—F. ROBINSON.

Setaria verticillata Beauv. Waste ground, Bradford, v.-c. 64, September 13, 1917.—J. CRYER.

Phalaris canariensis L. [334]. Army camping ground, Thetford, v.-c. 28, October 27, 1916.—F. ROBINSON.

P. minor Retz. Vale, Guernsey, August 1913.—C. V. B. MARQUAND.

Alopecurus aequalis Sobol. Reservoir, Knypersley, Stafford N., July 17, 1888.—J. W. WHITE.

Milium effusum L. [341]. Wood, Attleborough, v.-c. 28, June 2, 1917.—F. ROBINSON.

Phleum pratense L., var. *intermedium* (Jord.). See *Rep B.E.C.* 51, 1917. Nuffield, Oxon, Druce, nr. Salisbury, June 17, 1917.—DRUCE and GODDARD. " Differs from *nodosum* in its larger size and longer spike (8-10 cm.). . The stems are obliquely bent at base. These plants agree with the specimens cited by Rouy in Billot's *Exdicc.* 2760. Rouy alters the original description which has no reference to the colour of the anthers—a character of trifling value. The plant from Cranford (see *Rep. B.E.C.* 593, 1916) belongs here."—G. C. DRUCE. " Agrees very well with Billot's and Genevier's specimens and should come under the bulbous-rooted *nodosum* rather than under the fibrous-rooted *pratense*."—MARSHALL.

P. phleoides Simonk. Wilbury Hill, Hitchin, Herts, June 12, 1916. Coll. H. C. Littlebury; comm. G. C. BROWN.

Mibora minima Desv. Vazon, Guernsey, April 1913.—C. V. B. MARQUAND.

Agrostis setacea Curt. Roadside near Perranporth, v.-c. 1, June 1917.—F. RILSTONE.

A. nigra With. On heavy cultivated land, Ledbury, Hereford, v.-c. 36, July 23, 1917.—S. H. BICKHAM. " Yes, a new county record."—DRUCE. " Perhaps so, but different from the Fortingal plant distributed by Marshall (*Rep. B.E.C.* 508, 1913) and confirmed by Hackel. Griffith sent a specimen from Bangor, passed by Bennett (*Rep. B.E.C.* 1890) which seems very different in appearance from both the above. Perhaps we could have more specimens of *A. nigra* in future distributions."—WHELDON. "May pass, I think, though the inflorescence is not so dark as usual. It is nearer Syme's Balmuto specimens than my Fortingal ones of 1913."—MARSHALL. "Seems to agree fairly well."—BENNETT.

Polypogon monspeliensis Desf. Thorney Island, Sussex, October 1, 1917.—R. J. BURDON.

Calamagrostis canescens Druce. Goldmire Wood, Dalton-in-Furness, v.-c. 69b, August 6, 1917.—D. LUMB.

Deyeuxia borealis Laestad. (1) Near Loch Tay, Perth M., August 1917. Coll. Rev. Preb. BURDON. (2) Same locality. Coll. J. FRASER. See *Rep. B.E.C.* 288, 1888. Near Loch Tay. Rediscovered in 1917 by Mr J. Fraser within a mile of the original locality, and he and the Rev. Prebendary Burdon have sent specimens which are now distributed. See *Rep. B.E.C.* 133, 1917. If the plant is treated as a variety of *D. neglecta* I am afraid, according to the Actes, it must be called var. *elatior* (Hartm. in *Anders. Skand. Vaxt.* ii., 95) under *Calamagrostis neglecta* Gaertn., Mey., & Schb. *Fl. Wett.* i., 24, 1799, or *C. neglecta*, var. *elatior* Hartm. It is one of the most interesting gatherings of the year. Comm. G. C. DRUCE. "This is most acceptable as it was believed to be extinct. Hackel (see *Rep. B.E.C.* 139, 1911) considers that *Deyeuxia* should be merged in *Calamagrostis*; so the name will be *C. neglecta* Beauv., var. *borealis* (Laestad.)."—MARSHALL.

Lagurus ovatus L. Lancresse Common, Guernsey, August 1912. —C. V. B. MARQUAND.

Aira caryophyllea L. Moss-side near Woodvale, Lancs. S., June 30, 1917.—W. G. TRAVIS.

Deschampsia flexuosa Trin. Railway cutting, Kettering, v.-c. 32, July 9, 1917. Rare in Northants.—G. CHESTER.

Arrhenatherum elatius Mert. & Koch, var. *bulbosum* Presl. Beanfield, Wick, Gloster W., June 26, 1917.—IDA M. ROPER. "Just as there are two good species of Oak, of *Betula* and *Crataegus*, so too there are of *Arrhenatherum* in Britain. The differences which separate the common *elatius* from the Onion-couch-grass are certainly specific or sub-specific. Not only are there the root and nodal characters, but there are differences in the flower, and these are transmitted unchanged to their offspring even when grown in different soils. The statement that the Onion-couch is limited to agrestal situations is incorrect. Both species are found in cultivated or uncultivated ground. Doubtless if an area in which one species grew was brought under agriculture, the plant would be more widely spread by its operations. See *Rep. B.E.C.* 391, 1892 and 29, 1914. The name for the species is *A. tuberosum* (Gilib.)."—DRUCE. "Mine is a beautiful example, showing the 'bulbs' extremely well developed."—SALMON.

Eleusine indica Gaertn. Waste ground, Bradford, v.-c. 64, September 27, 1917.—J. CRYER. "Yes."—DRUCE and THELLUNG.

Phragmites communis Trin., var. *effusa* (Uechtr.). Wood Perry, Oxon, September 1916.—G. C. DRUCE. "Agrees best with the description in Ascherson and Graebner's *Synopsis* ii., 1, 329, of var. *flavescens* Custer in Gaudin *Flora Helvetica* vi., 341 (1830):—'Panicle light yellow-brown, mostly rather lax, with slender, overhanging branches. Spikelets few-flowered, therefore thin, almost linear.'"—MARSHALL.

Poa palustris L., var. *muralis* Asch. Waste cindery ground between Walton Gaol and Bootle, Lancs. S., v.-c. 59, July 1917.—W. G. TRAVIS.

P. Chaixii Vill. Brooklands Avenue, Sale, Cheshire, June 1917. Coll. G. A. Holt; comm. C. BAILEY. "Yes. A new county record."—DRUCE.

P. Balfouri Parn. ? Origin Caenlochen, Forfar; cult. hort. Oxon, August 1917.—G. C. DRUCE. "I agree, though the ligules are shorter than usual."—MARSHALL.

P. polynoda Parn. (*P. compressa*, var. β. Bab. Man.). Waste ground by canal, Bollington, Cheshire, v.-c. 58. July 1917. Coll. G. A. Holt; comm. C. BAILEY. "Collected rather too late, but the flowers appear to be free, and the ligule is prominent and blunt. Probably right."—MARSHALL.

P. bulbosa L. Littlehampton, Sussex, May 15, 1917.—R. J. BURDON.

P. remotiflora Murb., f. *exilis* C. E. Salm. Jersey, May 27, 1913. Mr Hunnybun kindly sent me these specimens, in a fresh state, in 1913, with the following note:—"You say anthers twice as long as broad. It will be more correct to say anthers 1½ as long as broad until they develop x when they are square. Dwell on the minute size of anthers, because starved specimens of *P. annua* growing with it mimic its colour and habit. I feel sure that many botanists will find these starved specimens of *P. annua* on well-trodden paths and say that *P. exilis* is a fraud." Members may like to compare these examples with the dwarf specimens of *P. annua* sent through the Club in 1912 by Mr D. Lumb. (*Rep. B.E.C.*, iii.-iv., 302, 1913).—C. E. SALMON.

Glyceria maritima Wahl. [v. 731]. Pagham, Sussex W., June 1917.—G. C. DRUCE. " Rachis and panicle-branches rough; stems compressed. Apparently a form of var. *hispida* Parnell, with very narrow spikes."—MARSHALL.

G. maritima Wahl. [v. 746]. Chichester Harbour, Sussex W., July 1917.—G. C. DRUCE.

G. maritima Wahl., sub-var. *caespitosa*. (1) [v. 728]. Pagham, Sussex W., July 1917. (2) [v. 760]. Chichester Harbour, Sussex W., July 1917. See *Rep. B.E.C.* 62, 1917.—G. C. DRUCE. " Hardly pure *G. maritima*. Is it not *G. distans* × *maritima*, with somewhat larger flowers than the other plant so named by Mr Druce?" —MARSHALL.

G. maritima Wahl., var. *hibernica* Druce. *G. festuciformis* Praeger not of Heyn (not *Foucaudii*). [v. 740]. Pagham, Sussex W., June 1917. See *Rep. B.E.C.* 62, 1917. Agreed to by Dr Stapf and W. B. Turrill. Dr Stapf agrees that those are not separable from Praeger's Irish *festuciformis*. He has not seen the true plant from the British Isles.—G. C. DRUCE. " A difficult grass, which is, I think, rightly referred to *G. maritima*, var. It approaches the weaker specimens of so-called *G. festucaeformis* from Co. Down, which Dr Stapf refers to *Atropis Foucaudii* Hackel, *apud* Foucaud, in *Bull. Soc. Bot. Rochell.*, 43, 1893 = *Glyceria Foucaudii* Hackel *in litt*; but the spikelets are fewer and smaller-flowered than in *G. Foucaudii*, and the upper pale is not ciliate."—MARSHALL.

G. maritima Wahl., f. *distantiformis*. [v. 741]. See *Rep. B.E.C.* 62, 1917. Chichester Harbour, Sussex W., June 1917. This is probably the var. *deflexa* (Syme). See *l.c.* The plant with purple spikelets is sub-var. *amethystina*.—G. C. DRUCE.

G. Borreri × *maritima* = × *G. Burdoni*. [v. 755]. Pagham, Sussex W., July 1917. See *Rep. B.E.C.* 61, 1917. Turrill thinks it is a *maritima* form. Regarding *maritima* we may add an important statement from Martin H. Sutton who has grown it in the grass garden at Reading for many years and in spite of the situation and soil, dry and gravelly, . . . " it remains true to type year after year. Naturally, however, the specimens are not so fine as by the sea-shore, where the species varies considerably. *G. festuciformis* true does not to our knowledge appear in the British form of *maritima*."—G. C. DRUCE. "The influence of *G. Borreri* is very clear. I should say that the other parent is either *G. maritima* or *G. Foucaudii*."—MARSHALL.

G. distans Wahl. Kirby-le-Soken, Essex N., June 1917.—G. C. DRUCE.

G. distans Wahl. [1898]. Lower Morden, Surrey, September 22, 1917.—C. E. BRITTON. "I presume a native in this station! If so, extremely interesting as my few records for the county are of ancient date. Watson (*Top. Bot.*) remarked :—' 17. Surrey! Probably so.' "—SALMON. "An unusual form; the panicle has ascending branches (or the lowest patent-ascending) even in fruit, never deflexed. Stems, spikelets and leaves slender. It seems to come very near Rouy's description (*l.c.* xiv. 195) of *Atropis distans* Grisebach, var. *tenuis* Uechtr. = *G. minutula Foucaud in litt.*"—MARSHALL. "It approaches var. *tenuiflora* Gren. & Godr."—DRUCE.

G. distans Wahl. Waste ground near the sea, Ballywalter, Co. Down, September 21, 1917.—C. H. WADDELL.

G. distans Wahl. × *G. maritima* Wahl. [721]. Pagham, Sussex, July 1917. See *Rep. B.E.C.* 61, 1917.—G. C. DRUCE. "Looks quite right; very interesting."—MARSHALL.

Festuca elatior L. Waste ground, Eastville, Bristol, Gloster W., July 2, 1917.—IDA M. ROPER. "Yes, a form (which I have from Warwick, Oxford, &c.) with larger spikelets than usual."—DRUCE.

F. sylvatica Vill. Near Hawkshead, Lancs., v.-c. 69 b., July 27, 1917.—W. H. PEARSALL. "I should put this under var. *decidua* (Sm.)."—DRUCE.

F. rubra L., var *fallax* Hackel. Barrow Hill, Potters Marston, Leicester, June 1917.—A. E. WADE. "Probably, but with rootstock inadequate for certainty."—DRUCE and MARSHALL.

F. rubra L., var. Sea wall between Milford-on-Sea and Hurst Castle, Hants S., June 4, 1917.—J. COSMO MELVILL. "Yes. *F. rubra* L., forma."—DRUCE. "Insufficient material, but probably a small form of the type."—MARSHALL.

Festuca ——? Army camping ground, Thetford, v.-c. 28, July 5, 1917.—F. ROBINSON. "*F. elatior* L., var. *pratensis* (Huds.)."—DRUCE.

Bromus madritensis L. [353]. Lucerne field, Threxton, v.-c. 28.—F. Robinson. "No, it is *B. rigens* L. (*maximus* Desf.)."—Druce. "*B. villosus* Forsk = *B. maximus* Desf."—Thellung.

B. hordeaceus L., var. *glabrescens* Druce. Walton, Lancs S., v.-c. 59, June 27, 1917.—J. A. Wheldon. "*B. hordeaceus* L., var. *leptostachys* Beck (1890) = *B. mollis* L., var. *leptostachys* Pers. (1805), the oldest varietal name."—Marshall.

B. hordeaceus L. Sea walls by the creek, Virley, Essex N., v.-c. 19, 1911. Approaching var. *leptostachys* Beck, vide *Rep. B.E.C.* 143, 1911.—G. C. Brown. "Var. *glabratus* (Doell), as is also my specimen from Wheldon, which is glabrescent."—Druce. "Only a starved state of the type; the flowers are very hairy."—Marshall.

B. hordeaceus L., var. Dry bank by the sea, Portpatrick, Wigtonshire, v.-c. 74, June 1916.—A. Wilson. "The awns are rather straight and the spikelets less softly hairy, yet, I think it may be put under *molliformis*."—Druce. "Apparently this is var. *contractus* Asch. & Graeb. = *B. mollis*, f. *contractus* Lange = *B. Ferronii* Mabille."—Marshall.

Brachypodium sylvaticum R. & S. Shady bank above Ullswater, Westmorland, v.-c. 69, August 11, 1917. Approaching var. *glabrescens* Syme.—S. H. Bickham. "Yes, much less hairy than usual, except at the nodes."—Riddelsdell. "This agrees with Rouy's definition (*Fl. de Fr.* xiv., 298) of var. *glabrescens* Coss. & Germ., an older authority than Syme :—'Tiges et feuilles glabrescentes ; épillets glabres.' "—Marshall. "Yes, but Cosson & Germain (1845) put it under *Festuca*, not *Brachypodium*."—Druce.

Lolium ——? Sewage Farm, Colchester, v.-c. 19, July 7, 1913. —G. C. Brown. "*L. perenne* L."—Thellung and Druce.

L. perenne × *Glyceria plicata*. Meadows, Chichester, Sussex W., July 1917. These specimens require a longer notice than can be given here. Three authorities agree with the above suggestion.—G. C. Druce. "Nyman, *Conspectus*, p. 830, mentions *G. loliacea* Godron = *Brachypodium loliaceum* Fries. Herb Norm. viii., 96, an alleged hybrid between *G. fluitans* and *L. perenne*, as occurring in England, Denmark, Scandinavia, Germany, France, &c. Mr Druce's grass has, I think, some such origin ; the *plicate* sheaths favour *G. plicata*, rather than *G. fluitans*, which the other characters suggest. In such cases, observation of fresh material is a great advantage, so the determination is most likely correct."—Marshall. "The 3 sheets from Chichester have been examined microscopically with great minuteness by our botanist, and it appears that two of these may be rejected as showing no distinctive variation from

Festuca loliacea. The sheet 2821, bearing also specimens of the suggested parents, did, however, call for more minute investigation and comparison with our own numerous types of *F. loliacea*; but even here sufficient deviation from these could not eventually be found to warrant the conclusion that it is a new hybrid, though one would not wish to be absolutely positive as to this without further research at Chichester. Our own collection of *F. loliacea* contains extremely varying types, and it is quite an easy matter to select spikes with acute and obtuse glumes and also some distinctly awned."—MARTIN H. SUTTON.

Agropyron repens L., var. The Haggs, Dalton-in-Furness, v.-c. 69 b., September 3, 1917.—D. LUMB. "Var. *Leersianum* Gray." DRUCE and MARSHALL.

Secale dalmatica. Waste ground, Uxbridge, Middlesex, June 4, 1917.—A. WEBSTER.

Taxus baccata L. Limestone pavement, Bodafon Hill (Little Orme), Carnarvonshire, September 3, 1916.—C. WATERFALL.

Equisetum sylvaticum L. Near Bwlch Gwyn, Denbighshire, September 18, 1916.—C. WATERFALL.

E. palustre L., var. *polystachyum* Vill. Charterhouse-on-Mendip, Som. N., June 18, 1917.—IDA M. ROPER. "Yes."—MARSHALL. "One of the two specimens I received has the main stem perfect, an unusual condition in this form."—RIDDELSDELL.

Ceterach officinarum DC. Walls near Compton Castle near Galmpton, Devon S., April 3, 1917.—C. WATERFALL.

Isoetes hystrix Dur. Lancresse Common, Guernsey, August 1912. —C. V. B. MARQUAND. "A very welcome species."—RIDDELSDELL.

Chara vulgaris L., forma. Ditch on Nailsea Moor, Som. N., July 27, 1911.—J. W. WHITE. "A form with broad secondary cortical cells."—GROVES.

C. hispida L. Pool near Zealand, Lancs. W., v.-c. 60, August 1916.—A. WILSON. "Yes, excellent specimens."—GROVES.

C. vulgaris L. Swamp, Tydn-y-gwynt, Rhyd-y-mwyn, Flints., September 5, 1916.—C. WATERFALL. "Yes, *C. vulgaris*; seems better able to live in a semi-terrestrial condition than any other species."—GROVES.

C. vulgaris L., var. ? Pond, Little Maplestead, Essex N., July 17, 1913.—G. C. Brown. "*C. fragilis* Desv."—Groves.

Mr T. A. Dymes of Carthona, 5 de Burgh Crescent, West Drayton, Middlesex, proposes to investigate the fruits and seeds of native species of Orchidaceae and will be grateful for correctly named and localised fruiting spikes or whole plants that can be grown on to seed.

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(2) To examine and describe the fruits and seeds with a view to ascertaining if any light can be thrown therefrom upon systematic questions.

(3) To discover if any appreciable and constant difference exists between species which are by common consent considered to be closely related.

(4) Whether, generally speaking, species, genera and tribes, so far as the British flora is concerned, can be distinguished by their fruits or seeds, or both.

The Secretary greatly regrets the delay in issuing the Report, which is solely due to the abnormal circumstances caused by the war.

[illegible] DEC.1918

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THE BOTANICAL SOCIETY AND EXCHANGE CLUB OF THE BRITISH ISLES.

REPORT FOR 1918

(WITH BALANCE-SHEET FOR 1917)

BY THE

SECRETARY,

G. CLARIDGE DRUCE,

TREASURER AND EX-PRESIDENT OF THE ASHMOLEAN NATURAL
HISTORY SOCIETY OF OXFORDSHIRE,
VICE-PRES. GILBERT WHITE FELLOWSHIP, ETC.

VOL. V. PART III.

PUBLISHED BY
T. BUNCLE & CO., MARKET PLACE, ARBROATH.
July 1919.

PRICE 7s 6d.

THE BOTANICAL SOCIETY AND EXCHANGE CLUB OF THE BRITISH ISLES.

(VOL. V. PART III.).

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BY THE

SECRETARY,

G. CLARIDGE DRUCE,

to whom, at Yardley Lodge, 9 Crick Road, Oxford, the Subscription, 7s 6d per annum, and Non-Contributing Member's Subscription of 5s per annum, should be paid on and after January 1, 1919.

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THE
BOTANICAL SOCIETY & EXCHANGE CLUB OF THE BRITISH ISLES.

THE REPORT OF THE SECRETARY & TREASURER

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FOR 1918.

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There are still a few complete sets of the *Reports* from 1879 to 1916, forming four volumes. These are available for members at £3 10s.

Now that the war is at length brought to such a splendid termination, we can look back upon the years since 1914 and congratulate the members upon keeping the Society going. As in the days of the French Revolution, when such wonderful work was done by French scientists, so in our smaller and less important sphere, a large amount of work has been carried out during the stress and turmoil of a nation in arms. Never has there been a period of greater botanical activity among our members. Only in the preceding year have we ever had so many recruits. But the work has had to be done under great disadvantages. The cost of travelling has been much increased, and the difficulties and discomforts have been many. The production of the *Reports* has been an enormous trouble, and the delay in their publication has been most annoying. The cost of paper alone has increased 500 per cent. from pre-war prices, and the cost of labour has been enormously enhanced, so that, despite our increased membership roll, one is not surprised to see once more an adverse balance. One is glad that it is so small. Had all the arrears of subscriptions been paid it would have been non-existent. It may be of interest to know that the subscriptions from the Exchange Club Members produce only about £22 10s, and the Distributor's Report alone cost £29 17s 6d. Our Society may be congratulated upon making no alteration in the price of its publications during the war years.

We are greatly obliged to the donors to our Benevolent Fund. These include, in addition to a special donation by Mr C. E. Britton included in the Balance Sheet, gifts from Mr F. J. Hanbury, Rev. Prebendary H. Fox, Rev. E. S. Marshall, Lord Rothschild, Prof. S. H. Vines, and Mrs Wedgwood of over £30 for a special case.

To Mr C. E. Britton we are greatly indebted for acting as Distributor and Editor of the *Exchange Club Report*, and sending out the plants so promptly. It is only fair to him to say that the very late appearance of the *Report* was owing in no way to any procrastination on his part. It was simply a difficulty with the printers, whose hands had been called up for service. He is to be congratulated on his successful Editorship under trying conditions. To our Publishers. Messrs T. Buncle & Co., Arbroath, we are under great obligations, since they have most generously met us with regard to the price charged for paper and printing.

Special thanks are due to Mrs Corstorphine for kindly checking the proofs, and to her and Rev. F. Bennett, Mr T. Gambier-Parry, and Mr F. N. Williams for literary assistance, and among others to Rev. E. S. Marshall, Rev. H. J. Riddelsdell, Dr Drabble, Lieut.-Col. Wolley-Dod, Messrs C. E. Britton, C. Bucknall, J. Groves, W. P. Hiern, C. C. Lacaita, D. Lumb, W. H. Pearsall, H. W. Pugsley, and C. E. Salmon for critical help.

For naming adventive plants we are again greatly indebted to Dr Albert Thellung; to Sir David Prain and the staff of the Royal Herbarium, Kew; Dr A. B. Rendle and Mr E. G. Baker of the National Herbarium, Cromwell Road; Professor Perceval of the Royal Agricultural College, Reading; Messrs Sutton, of the Royal Seed Establishment, Reading; Prof. S. H. Vines and Prof. I. B. Balfour for assistance in determining specimens or for facilities in consulting the collections under their care. It is a matter of great satisfaction that none of our National Herbaria suffered from the air raids. Some of the more valuable types have been carefully housed by Lord Rothschild at Tring.

It may be added that among the commonest plants which appeared on the turned up ground of the battlefields in France and Flanders was *Polygonum aviculare*, which attained a large size and rank luxuriance. A large number of other plants came from members in the trenches.

Contributions of books, specimens, &c., are welcomed for presentation to the University of Louvain. Each should bear the donor's name. We have to thank Mr Charles Bailey for a contribution of over 2000 specimens for this object, and also Mr J. E. Little and others.

It has been already remarked that the year 1918 showed some excellent work. Two of our members have each added a new species to Britain. Miss Fry discovered *Ajuga genevensis* in June last in Berkshire (see p. 299), and Mr Arnett, in September last, found *Centaurium scilloides*, var. *portense* in Pembrokeshire (see p. 290). Our *Report* also contains an overlooked record of *Rhinanthus Alectorolophus*, which was discovered by our veteran batologist, Rev. W. Moyle Rogers, in Devon in 1885, and refound there in another locality in 1912 by Mr W. P. Hiern. Its status has, however, to be ascertained. It has been recorded in the *Transactions of the Devon Association*. Mrs Wedgwood and the Secretary were also fortunate to rediscover *Potamogeton rutilus* in Anglesey (the records for Sussex, &c., in *Journ. Bot.* are erroneous), and *Cystopteris Dickieana* in Kincardineshire, and we are able to add three new county records for *Alchemilla argentea*, which may be expected to be found in other places. One of the most important new county records is that of *Juncus capitatus*, which Mr Bolton King discovered in Anglesey, a notable extension of its range. This suggests a careful search to see if *J. mutabilis* is not also present. It will be remembered that *Trifolium strictum* was once recorded from Anglesey, but has never been confirmed. Our member, Mr T. Attenborough, has been fortunate enough to meet with three specimens of *Orchis hircina* in Jersey. Mr J. Fraser detected a *Koeleria* growing among esparto grass introductions near Edinburgh which puzzled us. Eventually it has been described by Dr Stapf as a new species, bearing the appropriate name, *Koeleria advena*. Mrs Sandwith, too, has rediscovered *Phleum paniculatum* at Bristol, whence it was originally recorded from King Weston in that neighbourhood by Hudson in 1762. Its reappearance, therefore, links up a very old record with present times. The grass was cultivated at the Oxford Physic Garden, and a stray seed germinated on the adjacent wall of Rose Lane, whence Sibthorp (*Fl. Oxon.* 1794) recorded it, adding a general habitat for this species, " walls, dry pastures." Succeeding works elaborated this record to " dry walls, Rose Lane, Oxford," " dry walls, Oxfordshire," " dry stony places, Oxfordshire," " stoney fields, Oxfordshire," and the species was accorded a place in our British Floras which it did not deserve.

During the year we have suffered serious loss in the deaths of Mr J. E. Bagnall, A.L.S., Mr E. W. Hunnybun, Mr E. D. Marquand, Rev. T. Martyn, and the Right Rev. Bishop Mitchinson. Notices of these appear among the Obituaries. We have also lost four members from resignation or lapse.

The new members for 1918 (some have already appeared in last *Report*) include Mr A. Barrett, Mr E. J. Bedford, Rev. P. Bevan, Mr T. Bates Blow, F.L.S., Mr H. Neville Brothers, Mrs Butler, Rev. J. G. Buxton, Mrs Basil Champneys, Rev. A. D. Claye, D.D., Mrs Colville, Rev. E. C. Crutwell, Mr H. H. Dunn, Mr T. A. Dymes, F.L.S., Baroness Elphinstone, Mr J. J. Everitt, Mr J. L. Ewing, LL.D., Miss E. Du Cane Godman, Mr R. W. Goulding, Mr Stanley Guiton, Mr H. G. Gwatkin, Mr Gerald Haynes, Dr J. W. Haughton, Rev. Canon Headlam, Mr D. Lloyd Howard, Mr W. O. Howarth, Mr H. Wallis Kew, Mr R. Kennedy, Mrs A. Leith, Mr George Lillie, Right Hon. James Lowther, M.P., Mr St John Marriott, Lady Evelyn Mason, Rev. W. Wright Mason, Mr W. D. Miller, Duchess of Northumberland, Oxford City Library, Countess of Portsmouth, Earl of Plymouth, Miss Anna Robley, Dr E. J. Russell, Rev. Finlay Saunderson, Prof. W. Somerville,Swansea Field Naturalists' Club, Rev. F. Stone, M.A., Miss A. E. Thomson, Rev. Canon Tuckwell, Mr T. Trollope, Miss May A. A. Tulk, Mr E. Vaughan, Miss E. Wheelwright, F.L.S., Rev. W. Wilks, M.A., Dr White, and Mr W. Wise.

We beg to offer our sincere condolence to Mr Leonard Sutton, who has now lost four sons in the war, the last being Lieut. E. M. Sutton, R.E., who was killed in the spring; to Prof. Bateson on the loss of his eldest son, Lieut. John Bateson, R.F.A., who fell a sacrifice on October 14, having already gained the Military Cross; and to Mrs Gregory, the authoress of *British Violets*, on the recent death of her distinguished son from pneumonia following influenza. He had been gassed at the front, and was therefore especially susceptible to the pest which has devastated so many homes in this fateful year.

For our Editor and Distributor of the Exchange Club we have secured the services of our old member, Mr J. Walter White, F.L.S., Warnham, Woodland Road, Clifton, Bristol. He has been kind enough to offer to supply from his large store of duplicates the individual desiderata of members as far as possible. Therefore members desirous of availing themselves of this offer should send in their marked list of desiderata as soon as possible. The lists, printed or otherwise, will be returned with the plants and Exchange bundles next year. Exchange Club parcels should be sent before December 7, 1919, to the above address.

PLANT NOTES, ETC., FOR 1918.

(Mostly New Plants to the British Isles).

38. RANUNCULUS TRICHOPHYLLUS Chaix in Vill. Hist. Pl. Dauph. i., 335. In this volume the name is given without description and with merely a reference to Haller, 1162. Haller's is itself a compound species, therefore Mr Williams ignores Chaix and cites *trichophyllus* only from its restoration by Grenier and Godron *Fl. Fr.* i., 23, 1847. Rouy & Foucaud (*Fl. Fr.* i., 67), however, use the name *R. trichophyllus* Chaix as the name for a polymorphous group of twelve "formes." These are *R. radians* Revel, *Godroni* Gren., *Martini* Lamotte, *trichophylloides* Humn., *trichophyllus* Chaix *genuinus*, *capillaceus* Thuill., *paucistamineus* Tausch, *Drouetii* Schultz, *Britannicus* R. & F., *lutulentus* Perr. & Song., *filicaulis* R. & F., and *confervoides* Fr. The description of *R. Britannicus*, which has to be accounted for if, as seems likely, the name alludes to its being a British plant, no French localities being given, is "Feuilles toutes multiséquées, à lanières divergentes hors de l'eau; feuilles supérieures distinctement pétiolées; tige grêle; pédoncules grêles, courts (2 centimètres); fleurs petites; étamines 5-10, carpelles très hispides, un peu amincis au sommet"—a description which, Mr Williams says, does not apply to our British plant. As M. Rouy's herbarium is now in the possession of Prince Roland Bonaparte it would be well worth while seeing the original of the plant on which this description is based, and whether it is our usual form. It will be observed that in the above arrangement *Drouetii* is made subordinate to *trichophyllus*, whereas Mr Williams keeps them distinct, giving it the name *divaricatus* Schrank, dating from 1789.

41. R. PELTATUS Schrank, var. (vel forma) LACERUS. Foliis natantibus inaequaliter in segmenta acuta, cuniformia sectis, apicibus interdum in radios divaricatus prolongatis; foliis submersis flaccidis et cum ex aqua extrahuntur, collabentibus; segmentis 4-5 cm. longis, carpellis subrotundis. Differs from the type in the floating leaves being irregularly cut into acute, wedge-shaped segments, sometimes with the apices prolonged into long, comb-like

parts; submerged leaves flaccid and collapsing into a pencil or closely aggregated, the segments 4-5 cm. long; carpels rounder than type. Llanbadarn Fawr, Cardigan; Don, Alford, N. Aberdeen; Bardour Loch, Baldenoch, Stirling; Balnaha, Loch Lomond.

50. TROLLIUS EUROPAEUS L., [var.] RELICTUS Heslop-Harrison in Trans. Soc. Northumberland, Durham, and Newcastle-on-Tyne v., pt. i., 136, 1917. *Trollius* grows in the Lower Tees marshes and luxuriates at ten feet from sea level. This Dr Harrison cultivated side by side with plants from 1000 and 1800 feet from Alston, and with others from 500 feet from Wark. Wide divergences were at once noticed between the Pennine and Tees marsh specimens. Those from Wark, closely as they approached the mountain form, were nevertheless intermediate. Dr Heslop-Harrison has drawn up the following table to show concisely the main differences:—

CHARACTER.	UPLAND FORM (type).	LOWLAND FORM (*relictus*).
Flower buds.	Greenish.	Reddish brown.
Colour of flowers.	Yellow.	Slightly deeper.
Bracts.	Not so leaf-like and few.	Leaf-like and many.
Flowering spike.	Short and rarely if ever branching.	Long and branching frequently enough.
Seed pods.	Rich deep purple in colour.	Only very faintly so.
Leaves.	Much more compact owing to the closeness of the segments; on an average not so long.	Freer in growth in all these characters.

It would be instructive if further experiments were made so as to test the permanence of the above characters in seeding specimens. There is also the extreme high alpine form of the Scottish cliffs which has a facies of its own. It may be added that in the above note Dr Harrison has mentioned no special grade, and I am responsible for the introduction of the term "var."

68 (4). ACONITUM COMPACTUM Reichb. Uebers. Aconit. 27. In the *Flora of Perthshire* 54, 1898, Dr Buchanan White records *Aconitum Napellus* as an escape on the banks of the Tay and Earn. Last August on the tidal mud-banks below Perth I found an Aconite quite naturalised which belonged to the *Napellus* group. It is quite distinct from the native form and is, as Dr Stapf kindly tells me, *A. compactum* Reichb. "the commonest form of *Napellus*, sensu lato,

on the Swiss Alps." It has not been previously recorded as an adventive plant, but is doubtless of garden origin. G. C. Druce.

80. Papaver Rhoeas L., lusus. A curious monstrosity in which below the inflorescence on each stem there is a pair of extra sepals giving it a bracteate appearance. Found at Stoke Cannon, Devon, 1918, Miss Cobbe.

80. P. Rhoeas L., var. caudatifolium (Timb. Bull. Soc. Hist. Nat. Toul. iv., 163, 1870, as a species) Fedde in Pflanzenr. 297, 1909. As a "forme" in Rouy & Fouc. *Fl. Fr.* i., 154. Capsule broadly ovate, always narrowed at base, the lateral leaf-lobes few, usually narrow, slightly toothed or undulate, the terminal lobe larger and elongate, lanceolate-linear, serrulate, and in the stem-leaf forming the larger portion of it; flowers often large, the petals narrowed into the claw; hairs of stem spreading.—Herba plerumque elata; folia pinnatifida, rarius pinnatipartita, segmentis lateralibus paucis, angustis, interdum abbreviatis, dentatis vel undulatis, terminali (praesertim foliorum caulinorum) multo majore elongato, lanceolato-lineari, serrulato, minimum quidem dimidium, plerumque autem majorem partem totius folii formante; flores saepe majores, petala (an semper?) subunguiculata. England—Yorkshire, Surrey, 1881, Nicholson; France—(sub nom. *P. Fuchsii*) Toulouse, Timbal-Lagrave in *Soc. Dauph.* n. 27774, 1881; Germany, Italy, Greece, Balkans, Russia, Persia, Asia Minor, Egypt, Tunis, Algeria, Morocco, Canaries, Fedde, *l.c.*; Brixham, S. Devon, Miss Cobbe; Burpham, W. Sussex; Lewes, E. Sussex; Wootton, Berks; Pyrford, Surrey; Brickhill, Bucks; Headington, Oxford, 1883; Yardley Gobion, Northants, 1875, Druce; Lighthorne, Warwick, Miss Palmer.

Fedde in *Pflanzenreich*, *l.c.*, gives the following clavis to the varieties of *P. Rhoeas*:—

A.. Varieties based on leaf form.
- a. Leaves dentato-pinnatifid or sub-pinnatifid.......Var. genuinum Elkan. Varying
  - *a.* Pinnatifid with inciso-sub-crenate lobed segments............... .... Sub-var. *quercifoliolatum* Fedde.
  - *b.* Pinnatilobed with oblong crenate segments. .... Sub-var. *obtusilobum* Fedde.
- b. Leaves often sub-entire, deeply serrate or serrato-dentate. .... .Var. subintegrum Willk. & Lange. *uniflorum* (Balb.).

Varying

With closely patent stem-bristles and long hairs. .... Sub-var. *crinitum* (Fedde).

c. Leaves pinnatifid, the lateral segments few, narrow or abbreviated, the terminal much elongated, serrulate........................ Var. CAUDATIFOLIUM Fedde.

Varying

a. Leaf segments narrowly linear-lanceolate or nearly entire...... .. .. Sub-var. *parvicaudatum* Fedde.

b. Lower leaves sub-pinnatifid, the upper with a long terminal lobe as in the foregoing. .. .. Sub-var. *subpinnatifido-caudatum* Fedde.

c. Stem-bristles long, brown-purple, those of the sepals golden....... .. . . Sub-var. *aegadicum* Fedde.

d. Leaves often trifid or trisected, segments feebly dentate................ .... Var. TRIFIDUM Fedde.

e. Leaves pinnatipartite, segments sub-entire. .... Var. CRUCIATUM (Jord.) Fedde.

f. Leaves bipinnatifid or rarely sub-tripinnatifid, the segment lobes narrowly linear.......... Var. DODONAEI Fedde.

g. Leaves often tripinnatisect........................ Var. MULTIFIDUM Fedde.

B. Varieties based on petal colour.

a. Petals pale red, flowers small.... . .. . Var. PALLIDUM Gren. & Godr.

b. Petals white, 2·5 cm. long......... .... Var LEUCANTHUM Fedde.

c. Petals violet... ... . Var. VIOLACEUM Bréb.

C. Varieties based on leaf clothing.

a. Plant sub-glabrous, few stem-bristles............ Var. GLABELLUM Elkan.

b. Plant glabrous, except a few bristles on leaf-nerves and apices of leaf-teeth......... .. ... . Var GLABRUM Fedde.

c. Hairs on peduncles red .... Var. PRYORI Druce. (*erythrotrichum* Fedde).

d. With stem-bristles and tubercles... .... Var. TUBERCULIFERUM Fedde & Bornmüller.

D. Varieties based on the stigmatic disc.

a. Capsule not stipitate, disc sub-pyramidal, umbilicate (0·5-1·5 mm.)... .... Var. OMPHALOPHORUM Fedde.

b. Capsule stipitate, disc flat, umbilicate............ .... Var. UMBILICO-SUBSTIPITATUM Fedde.

E. Capsule sub-stipitate, stigmatic rays 12-20..... Var. HOOKERI (Baker) Fedde.

F. Peduncle scapiform, elongate, stigmatic rays 5-6........ .... Var. PSEUDO-EROSULUM Fedde.

Var. TRIFIDUM Fedde. I referred to this, which seems well worth distinguishing as a variety, in the *Flora of Oxfordshire* 18. 1886. It almost certainly crosses with other forms, and is sometimes found with crimson stem-bristles.

Var. SUBINTEGRUM Willk. & Lange Prod. Fl. Hisp. i., 872. Fedde in Pflanzenreich 297, 1909. Var. *uniflorum* (Balbis ex Spenner Fl. Frib. iii., 980, 1829, as a species). ? Var. *pallidum* Gren. & Godr. Fl. Fr. i., 58, 1848. Tota herba plerumque gracilior (an modo forma depauperata?); folia omnia vel plurima grosse serrata vel serrato-dentata, rarius dentato-pinnatiloba vel rarissimo, imprimis inferiora, pinnatifida segmentis integerrimis. England, France, Spain, Portugal, Germany, Italy, Istria, Turkey, W. Asia, N. Africa. Boar's Hill, Berks; Shotover, Oxford; Brickhill, Bucks.

Var. VIOLACEUM Brébisson Fl. Norm. ed. 5, 18, 1879. Folia subbipinnatifida, segmentis altius incisis; petala violacea. Burpham, W. Sussex; Great Doward, Hereford.

Even this large series of varieties does not exhaust the named forms. These varieties referred to are not of equal grade. They differ from each other as the stars in glory. But it appears more convenient to call them varieties than to enter the quagmire of vars. and sub-vars., of forms and subforms, of races and monstrosities, as to the limits of which no two authors agree, and in the shifting phantasmagoria the trivial name, thanks to the absurd ruling at Vienna, may be changed with each move according to the will of the author. Among these which are given in Fedde's clavis, are P. RHOEAS, forma SETOSA Bornmüller It. Pers.-Turc. n. 3228, 189, 1892, Brixham, S. Devon, Miss COBBE; var. ROSEUM Kuntze, petala pallide rubra, livida rosea; var. IMMACULATUM Kuntze, petala rubra immaculata, common in Britain; var. HOFFMANNIANUM Kuntze, petala rubra, basi nigro-maculata, macula albo-marginata. This is rather frequent in England—Brixham, S. Devon, Miss COBBE (!); Odiham, N. Hants, Miss PALMER; Swanage, Dorset; Lyndhurst, S. Hants; Pyrford, Surrey; Burpham, W. Sussex; Eastbourne, Sandhurst, Tubney, &c., Berks; Headington, Oxford; Yardley Gobion, Northants; Edge Hill, Warwick; Stow, E. Gloster. DRUCE. There are also variations of *caudatifolium* and *Hoffmannianum* with red stem-bristles. The stigmatic discs afford other varieties. One has them thickly covered with blackish-violet velvety indumentum, another being almost smooth, and the number of rays also varies. The capsules vary from flat-topped to rounded and their base may be narrowed or rounded. The juice is normally white, but a yellow-juiced variety, *chelidonioides* Kuntze, has occurred in

Britain. The hairs on the stem are normally patent but plants with appressed stem-bristles occur. These may be hybrids of *dubium* but *P. strigosum* Boenn. is separated by Fedde from *Rhoeas* by nineteen species. Fedde gives no British locality for *strigosum* or its seven varieties. In addition to the stem-bristles being red, golden-orange forms occur as at Brixham, S. Devon, Miss COBBE; Wootton, Berks, &c., DRUCE.

The extreme diversity of *P. Rhoeas* need not be wondered at. With cereal culture introduced ages ago these agrestal weeds, like cereals, came from widely separated areas of the Old World. Coming into a new area they would be more likely to cross with their allies from other geographic sources, and these again would cross from time to time with new immigrants so that this wide range of variations is not difficult to account for. Hitherto these forms have been neglected in Britain. In France Rouy & Foucaud restrict the true *Rhoeas* to plants having capsules rounded at the base and having pinnatipartite leaves. Under this they put var. *pallidum* Gren. & Godr. (my var. *uniflorum*), var. *violaceum* Bréb., var. *vestitum* Gren. & Godr., var. *conicum* Legrand. Then come " formes " (1) P. INSIGNITUM Jord. with top-shaped capsule, deeply pinnatipartite leaves having pinnatifid lobes; (2) P. INTERMEDIUM Beck., (*P. Dodonaei*), which is figured in Dodonaeus' *Pemptades* 444, 1581, with its vars. *crucifolium* Timb., *arvaticum* (Jord.), *erraticum* (Jord.), and *segetale* (Jord.); (3) P. CAUDATIFOLIUM Timb. with its vars. *agrivagum* (Jord.), *cruciatum* (Jord.) and *serratifolium* Hérib.: (4) P. STRIGOSUM Boenningh., and (5) P. ROUBIAEI Vig.

131. BARBAREA INTERMEDIA Bor., var. FALLAX Loret et Barr. Fl. Montp. ed. 1, p. 42. Differs from the type in the spreading silicles. Oat field, Lower Morden, Surrey, July 1918, C. E. BRITTON.

184. SISYMBRIUM ALTISSIMUM L., var. UCRAINICUM (Blonski) Thell. in Hegi Ill. Fl. Mitt. Eur. iv., 179, 1918 as forma. Milverton, Warwick, 1894, H. BROMWICH as *S. Columnae*. Plants were distributed through the Club in 1894 but without mention in the *Report*.

193 (3). S. THELLUNGII O. E. Schultz in Engl. Pflanzenreich, (Crucif.-Brass.) mscr. Syn. *Brassica pachypoda* Thellung in Viertelj. Nat. Ges. Zürich lvi., 257, 1911, non *Sisymbrium pachypodium*

Chiovenda in Annali di Bot. ix., 52, 1911. Alien, Africa austr. Meanwood, Leeds, September 1917, E. C. HORRELL. Teste A. THELLUNG.

247 (21). LEPIDIUM SPICATUM Desv. in Journ. de Bot. iii., 178, 1814. Stem herbaceous, upright, with simple branches; leaves linear, pointed, entire, glabrous, adpressed to the stem; silicles almost imbricate, disposed in a long spike, orbicular and emarginate, a little rounded at the top, with no projecting style. A specimen, of South American origin, is in the Herbarium of the Paris Museum. It is allied to *virginicum* but is easily distinguished by the arrangement of the silicles. Melrose, Roxburgh; Galashiels, Selkirk, Miss I. M. HAYWARD. First recorded in *Rep. B.E.C.* 187, 1915 as *L. bonariense* L., var. *Stuckhertianum* Thell., but Dr Thellung, having grown it from seed, now identifies it as above. It is a native of Chile and the Magellan area.

247 (35). L. PEREGRINUM Thell., var. nov. GLABRIPES Thellung. Galashiels, Selkirk, 1918, Miss I. M. HAYWARD. Differt a typo pedicellis glaberrimis nec intus puberulis, praeterea et inde racemis fructiferis elongatis haud distincte lateralibus, siliculis latioribus (2 :1¾ mm.), ovato-suborbiculatis, emarginatura valde angusta, seminibus latioribus (1¼ : fere ¾ mm.) foliis minoribus. Planta evidenter magis normaliter evoluta quam specimen originale typi (qui = forma *umbrosa* ?). A. THELLUNG, in *lit.*

357. CUCUBALUS BACCIFER L. This was first recorded in Ray *Syn.* 267, 1724 by Dillenius as "gathered in hedges in Anglesey by Mr Foulkes of Llanbeder and sent to Dr Richardson," but in 1727 Mr Foulkes wrote to Dr Richardson saying he had been misinformed. Smith (*Brit. Fl.* 464) says the Rev. H. Davies could never meet with the plant in that island. Dr Macreight (*Man. of Botany*, 1837) says it was found by Mr G. Don in shady woods near Edinburgh, but Prof. Don said that his brother only thinks the plant he saw might have been *Cucubalus*. Therefore the earliest unquestioned record is that of Mr G. Luxford who (*Mag. Nat. Hist.* ii., n.s., 45, 1838) records it from the Isle of Dogs. He says that while he was botanising there in June he observed it growing among nettles and brambles on the southern bank of one of the ditches in considerable quantity. He

thought it was *Cerastium aquaticum* as it was not in flower. In the early part of the following August he again saw it and as it was in full flower to his surprise and delight he perceived it to be the highly interesting *Cucubalus*. "From the very luxuriant state I should conclude that it had been for a long time in undisturbed possession of the place where it was growing, and the ditch having been cleaned out and the banks cleared of their rank herbage on each side of the place, it is not improbable that the plant had been destroyed in the cleared parts." As we know the *Cucubalus* continued there for some years, and having in mind its recent discovery in Norfolk by Mr Robinson it may be we have been wrong in treating it as an adventive plant in the Isle of Dogs as the locality was not a very likely one for aliens, nor was the plant likely to be introduced with ballast. It seems much more likely that the seeds were bird-brought from the continent. There is another overlooked record given in *Phyt.* 295, 1842 from Mr H. O. Stephens of Bristol, who says that on the margin of his copy of Ray's *Syn.*, in old writing, is a note by the former owner of the book that *Cucubalus* grew at Springfield, Essex.

371. CERASTIUM VISCOSUM L. In the MSS. for the *Cambridge Flora* I divided the variations of this polymorphic plant into five forms—(a) the type, being the sub-var. *corollinum* (Fenzl as a var.); (b) forma *apetalum* (Murbeck under *glomeratum*); (c) forma *gracile*, based on plants from the ferruginous sandstone of Brickhill, Heath, &c., Beds and Bucks; (d) forma *densum* (sub-var. *confertum* Rouy & Fouc.), with the heads closely aggregated and the plant short and stout, and (e) forma *elongatum* (Rouy & Fouc. as a sub-var.), the latter very closely allied to *gracile*. *Elongatum* has long peduncled flowers in lax cymes and the plant is robust and much branched. This I have from Skye, 1910; Oxford, 1858; Lane End, Bucks, 1802, &c. This form was included in Beguinot *Fl. Ital. Exsicc.* n. 804 as a variety.

399. ARENARIA CILIATA L., var. HIBERNICA (Ostenf. & Dahl. in Nyt. Mag. 216, 1917, as a sub-sp.) comb. nov. This is the Ben Bulben plant.

408. SAGINA PROCUMBENS L., lusus DAVIESII. Originally found on a green near Beaumaris, Anglesey, by the Rev. H. Davies in 1817

it was described and figured by Baxter in *Phaen. Bot.* iii., 199, 1837. It was cultivated in the Oxford Botanic Garden by Baxter and in 1836 he says a single flower, having only a diameter of one-tenth of an inch, had 44 perfectly formed petals. (See Williams in *B.E.C. Supp.* 194, 1917). In 1918 Mr Bolton King found a similar plant near Rhosneigr, Anglesey, showing how the plant persists in that island. It is, however, not confined to Anglesey as is evidenced by the note in *Phyt.* 1000, 1850 by the Rev. R. C. Douglas, who says he found a similar form among sphagnum in a small bog by the roadside about half way between Stafford and Rugeley.

453. MALVA ROTUNDIFOLIA L. (M. NEGLECTA Wallr.), var. BRACHYPETALA Uechtr. Kirkstall, York, August 1917, E. C. HORRELL. Possibly adventitious. Determined as probably this by Dr THELLUNG.

456 *b*. M. PARVIFLORA L., var. MICROCARPA (Desf.) Fiori et Paoletti. *M. microcarpa* Desf. Tabl. ed. 1, 144. Alien, Europe. Mirfield, Leeds, 1916, E. C. HORRELL.

488. GERANIUM ROBERTIANUM L. The British varieties are not adequately dealt with by Knuth in his Monograph. He omits mention of var. *maritimum* Bab. and var. *purpureum* Forst., non Vill. There are good specimens of the latter at South Kensington. Babington (*Man.* ed. 1, 62, 1843) diagnoses var. *purpureum* (Forst.) as a plant with petals narrower than type, sepals glandular-hairy, capsule glabrous, more wrinkled, leaves with narrower segments and (*Man.* ed. 3, 62, 1851) he diagnoses var. *maritimum* as a plant with glabrous carpels with 1-2 deep transverse wrinkles at the top. Var. *maritimum* Bab. and var. *rubricaule* Hornem. are very closely allied. Other names in the British Herbarium at South Kensington are *G. Lebelii* Bor., *G. minutiflorum* Jord., and of course *G. modestum* Jord. and *G. purpureum* Vill. The true *G. Lebelii* is a plant with the general characters of *G. modestum* Jord. with small red flowers but with the carpels covered with a short grey pubescence. The true *G. minutiflorum* Jord. has small red petals with an oval-oblong limb. It is a fetid plant of a sombre green or dark red colour with peduncles longer than the leaves. Various plants have been sent to the National Herbarium named *G. modestum* Jord. The true plant has small red

flowers with anthers yellow, then brown, the beak of the fruit about 15 mm. long, and the whole plant somewhat glandular but less fetid than *G. minutiflorum* Jord. E. G. BAKER.

497 (2). ERODIUM SEROTINUM Stev. in Mém. Ac. Pétersb. iii., 297, 1809, appears in a paper on the Adventive Erodium species by F. ARNOLD LEES in the *Naturalist* for 1918.

526. ACER CAMPESTRE L., var. LOBATUM Pax. sub-var. MOLLE (Opiz) Pax. Hedge, far from houses, Dorrington, S. Lincoln, June 1915, Rev. W. WRIGHT MASON. Det. A. THELLUNG, 1918.

562. MEDICAGO FALCATA L., var. PROCUMBENS (Bess.) Asch. & Graebn. *M. procumbens* Bess. Prim. Fl. Galic. ii., 127, 1809. *M. Falcata* L., var. *major* Koch Syn. ed. 1, 160, 1835. This differs from the type in its more robust growth, the longer stems, in the larger and more dentate stipules, and in the larger leaflets. Found on the Bleakdown Golf Links, Surrey, 1918, Miss COBBE and Lady DAVY. Det. at Kew.

629 (2). TRIFOLIUM ANGULATUM Waldst. & Kit. Pl. Rar. Hung. i., 26. Alien. Hungary, &c. Ashton Gate, Bristol, 1918, Miss M. COBBE.

630 (2). T. ISTHMOCARPUM Brot. Phyt. Lusit. i., 148, t. 61. Alien. Portugal. Among wool-shoddy aliens in a field near Byfleet, Surrey, 1918, Miss A. B. COBBE.

640 (3). T. MICROCEPHALUM Pursh Fl. Amer. Septent. ii., 478, 1814. Crowborough Camp, E. Sussex, July 1916, W. B. TURRILL.

666 (2). CORONILLA CRETICA L. Alien, Reg. Medit. Elland, York, 1916, F. PULLAN. W. B. TURRILL agrees with me in thinking the Yorkshire plant is a luxuriant example of this southern species.

673 (2). ONOBRYCHIS ALBA Desv. Journ. de Bot. iii., 83, 1814. A native of Italy, Greece, Macedonia, Serbia, Hungary, Roumania, Banatia, Roumelia. Fallow fields by Ermyn Street, on Downs above Ashstead, Surrey, June 1918, C. E. BRITTON. This has leaves with appressed hairs, white flowers in cylindric racemes, the wings a little

shorter than the calyx and the keel a little longer than the vexillum. The calyx-teeth in the Surrey specimens are more than half as long as the corolla. Det. at Kew as *O. alba* Desv., forma.

679 *c*. VICIA CRACCA L., var. LINEARIS Peterm. In plenty on the shingle of the Dee at Ballater, S. Aberdeen, August 1918, G. C. DRUCE.

883. GEUM RIVALE L., lusus. Through the kindness of our member, Mrs Leith, who sent me a plant gathered by her sister, Mrs Tryon, at Great Durnford, Wilts, I am able to report a beautiful form of the above. Out of a double flower grew a short stalked inflorescence of numerous petals of a rich crimson colour. Many examples of variations are given in Master's *Teratology*, but not, I think, this particular form.

910. ALCHEMILLA ARGENTEA Don. By a curious coincidence just as the paper on this species in *Rep. B.E.C.* 20, 1917 came to me I was going through a large collection of British plants which had been kindly given to the University of Oxford by our member, Miss Agnes Thomson, the niece of the celebrated Indian botanist and companion of Sir Joseph Hooker in the Himalayas. Part of this collection was made by Dr Thomson. One sheet, labelled *Alchemilla alpina* from Ballinluig, Mid Perth, gathered in 1877, is *A. argentea* Don, and a welcome addition to the flora of Perth. It may be that the Ben Lawers locality is also correct, and that in the locality near Perth (*Rep. B.E.C.* 24, 1917) it may be native. Another locality has come to my knowledge—" on the banks of the Dee, Peterculter, Mrs Garland," but she does not remember on which side of tne Dee the plant grew, so it may be either in Aberdeenshire or Kincardineshire. This note I had through the kindness of our member, Mr E. B. Bishop. I have seen the specimen which he has had in cultivation since its discovery in 1912. Mr St John Marriott also kindly informs me that his brother. C. H. Marriott, and W. Culcher, B.Sc., in the summer of 1909 found a large clump of it, with the Beech and Oak Ferns, on the Queensberry Hill near Campbell Church, Moffat, Dumfriesshire, at 2000 feet, miles from any habitation. We may now therefore give its comital distribution as Ang. 1 ? Scot. 5 [2] 1 ?—70 Cumberland ? Dickinson ; 72 Dumfries (!) Marriott; 88 M. Perth, Ben Lawers ?,

Perth Barclay, adv.; 89 E. Perth, Ballinluig (!) Thomson; 90 Forfar (!) G. Don, Black, and Corstorphine; 92 or 93 Deeside, Peterculter (!) Garland; 100 Arran, Glen Sannox (!) Tyacke and Slater; 104 Skye G. Don ?; 112 Shetland Beeby, adv.

910 (2). A. PUBESCENS Lam. Found originally on Hambledon Common, Surrey, by Mrs C. WILDE in 1912 and still existing in July 1918. Almost certainly from a neighbouring garden, E. B. BISHOP, in *lit*. It was named by C. E. SALMON in *Journ. Bot.* 141, 1913.

951. PYRUS COMMUNIS L., var. DESEGLISEI (Rouy & Camus Fl. Fr. vii., 10, as a var. of *P. Piraster*) comb. nov. Found by CEDRIC BUCKNALL and J. W. WHITE on the margin of a wood, bounded by a small stream, Yate Lower Common, W. Gloster. This is described by Rouy & Camus as having small fruits, the size of a cherry; leaves sub-orbicular, mostly cordate at base, relatively large. It is the *P. cordata* of Déséglise in Billot Exsicc. n. 2458 and *P. cordata* in Boreau Fl. Centre 235 in part, but not of Desvaux, which is the plant which formerly appeared in our lists as var. *Briggsii*. This latter has fruits only about 10 mm. across, while the Gloster plant has fruits 20-25 mm. across. As Mr Bucknall points out, it belongs to the Pyraster section under which it is put in *Fl. France* and not to *Achras*. Mr Bucknall sent specimens to the Club gathered in August and September 1917. See *Rep. B.E.C.* 222, 1917. He and Miss Roper tell me that the trees are quite large, with a girth of four feet, and appear quite wild. They should be compared with Mr Riddelsdell's Pear from the Great Doward.

966. CRATAEGUS MONOGYNA Jacq., vel C. OXYACANTHA L., var INCISIFOLIA mihi. Allied to var. *laciniata* Wallroth. Foliorum lobis 5-7, non contiguis, fere ad nervum medium incisis, sinus grandes et latos, lobi in superiore parte integri aut crenati, plerumque acuti, raro rotundi, angusti, 5-8 mm. lati. The leaf-lobes (5-7) are cut nearly to the midrib, with large open sinuses, the upper part of the lobes rounded or more usually acute, entire or notched, the leaf-lobes narrow, 5-8 mm. broad. In *laciniata* the lobes are nearly contiguous and are not so deeply cut. Slinfold, J. W. WHITE; Claygate, Surrey, C. E. BRITTON; Arundel, W. Sussex; Wytham, Berks; Castle-

thorpe, Bucks; Yardley Gobion, Northants, G. C. DRUCE; Yeldersley, Derby, W. R. LINTON; Edinburgh, G. C. DRUCE.

977 (2). SAXIFRAGA DRUCEI Marshall. Nomen in *Rep. B.E.C.* 224, 1917. Published in *Journ. Bot.* 65, 1918. Discovered on Brandon Mountain, Kerry, on the summit rocks, September 1906, G. C. DRUCE. Praeger says it also occurs in Donegal.

Gen. 185 (5). PHILADELPHUS L.

1000 (10). P. CORONARIUS L. Alien, Europe. Little Broad. South Repps, A. R. HORWOOD; planted in hedges about Merton and many other places in W. Norfolk, July 1918, G. C. DRUCE.

1010 (2). SEDUM MAXIMUM Suter Fl. Helv. i., 270. Alien, Europe, widely distributed. Hambledon Common, Surrey, August 1912. Identified by C. S. NICHOLSON. Probably from the same garden as *Alchemilla pubescens*, but a quarter of a mile away, E. B. BISHOP, in *lit.*

1053. EPILOBIUM LANCEOLATUM × PARVIFLORUM = E. ASCHERSONIANUM Hausskn. A partly sterile plant with the habit of *lanceolatum* and (teste Rev. E. S. Marshall, not quite like a natural garden hybrid grown by W. R. Linton) showing strong evidence of *parviflorum* in the buds and pubescence. It is a remarkably leafy plant. This is the first record of it in a natural state in Britain. Near Amberley, Sussex, 1919, G. C. DRUCE.

1107 (2). CARUM AROMATICUM Druce in Rep. B.E.C. 612, 1916. *C. copticum* Benth. & Hook. f. Gen. Pl. i., 891. *Trachyspermum copticum* Link. Dean Clough, Halifax, York, September 1917, E. C. HORRELL. Det., as *Trachyspermum aromaticum* (L.), by Dr THELLUNG, April 1918.

1107 (3). C. RIDOLFIA Benth. & Hook. f. Gen. Pl. i., 891. *Ridolfia segetum* Moris. Alien, S. Europe—Spain, Portugal, Italy, &c. Mirfield, York, 1916, E. C. HORRELL. An imperfect specimen but "probably this," W. B. TURRILL. Dr THELLUNG agrees.

1110. SIUM LATIFOLIUM L., var. ANGUSTATUM Doell Fl. Bad. 1007, 1857. Wolvercote, Oxon. See Druce *Fl. Berks*, 240, 1897.

1110. S. LATIFOLIUM L., var. or lusus BRACTEATUM mihi. Umbellules with long foliaceous bracteoles. Bracteolis foliaceis. Port-meadow, Oxford, August 1883, G. C. DRUCE.

1134. OENANTHE CROCATA L., var. or forma TENUIFOLIOLATA mihi. Differs from the type in the much narrower leaf-segments, those of the lower leaves 8-15 mm. across, apices acute, those of the upper leaves 2-3 mm. across. Inferioribus foliorum segmentis 8-15 mm. latis, apicibus acutis; superioribus, segmentis 2-3 mm. latis. By the Arun, near Burpham, W. Sussex, 1918, G. C. DRUCE.

1151. PEUCEDANUM SATIVUM Benth. & Hook. f., var. EDULE (DC.). Var. *dulce* Druce Brit. Pl. List. *Pastinaca sativa* Hoffm., var. *edulis* DC. This cultivated form of the Parsnip, distinguished by the larger and more fleshy roots, by the glabrous leaves, shining above, the segments narrowly wedge-shaped at base, is occasionally found on field-borders and rubbish-heaps as a straggler from or an outcast of cultivation. At Craigmillar Castle, near Edinburgh. Mrs Wedgwood found this form in some quantity with *Rumex scutatus* and quite naturalised. She tells me she learned from the custodian that "Mary Queen of Scots was so fond of Sorel she sent to France for seeds. They were delivered to her in the tennis court, and when she opened the packet some seeds blew away, and their descendants still flourish on the wall of the court." Doubtless the Parsnip was sent for her kitchen-garden, and both still survive. G. C. DRUCE.

1233 (2). CEPHALARIA TATARICA Schrad. Cat. Sem. Hort. Gott. 51, 1814. Alien, Russia, Orient, &c. Naturalised on edge of gravel pit, Wareside, Herts, 1915-16, J. W. HIGGENS, vide sp.

1253. ASTER LAEVIS L., var. GEYERI Asa Gray Fl. N. Amer. 183. Alien, N. America—valleys of the Northern Rockies to Idaho south to Wyoming. Canadian Mule Depot, Long Ashton, N. Somerset, 1917, Miss I. M. ROPER. Named at the Missouri Bot. Gard., St Louis. This has the involucre broader and less imbricated; its bracts of thinner texture, mostly attenuate-acute, the green tip less definite.

1261 *c*. ERIGERON ACRE L., var. CORYMBOSUM Wallroth. Tottenhill, W. Norfolk, J. E. LITTLE and Miss ANNA LUDDINGTON. Differs from the type in having a white pappus. See *Rep. B.E.C.* 228, 1917.

1270. ANTENNARIA DIOICA Gaertn., var. HYPERBOREUM DC. Inner Hebrides—Isle of Skye. See Williams' *Prod.* i., 17, and *E.B. Suppl.* t. 2640, 1830 (as *A. hyperborea*). It was first found in Skye, on rocky ground on Little Breeze Hill, September 1794, by J. Mackay. Found on the Cuchullins in 1835 by Dr N. Tyacke. Under the illogical rule of keeping the first name used in the grade in vogue, and not the earliest trivial, which assuredly is the wiser and more conservative plan, this should be called var. LANATA (Gray Nat. Arr. 458, 1821, as a var of *A. montana*) Druce, comb. nov.

1285. PULICARIA DYSENTERICA Bernh., var. DISCOIDEA (Druce under *Inula*). *Journ. Bot.* 82, 1880. Harpole, Northants, G. C. DRUCE. A lusus rather than a true variety.

1292. AMBROSIA TRIFIDA L., forma INTEGRIFOLIA (Muhl.) Torrey & Gray. Alien, N. America. Morley, F. PULLAN; Elland, York, 1916, E. C. HORRELL. Det. A. THELLUNG.

1297 (2). RUDBECKIA HIRTA L. Alien, America. Bristol, 1917, Miss I. M. ROPER. Det. A. THELLUNG.

1301. HELIANTHUS species. Varieties of *H. annuus* and *lenticularis* when crossed produce plants which are as fertile as the parents. The annual species (typical *Helianthus*) crossed together are quite fertile, but the hybrids themselves are sterile. *H. annuus* has been crossed with *argophyllus*, *petiolaris* and *cucumerifolius*. Annual species can rarely be crossed with perennial, and when this occurs the offspring closely resembles one or other parent species. T. D. A. COCKERELL in *Nature*, September 26, 1918.

1301 (2). H. LENTICULARIS Dougl. in Bot. Reg. t. 1265. Bristol, Long Ashton, N. Somerset, 1917, Miss I. M. ROPER.

1301 (8). H. DIVARICATUS L. Long Ashton, N. Somerset, 1917, with the above, on the site of the Canadian Mule Depot, Miss I. M. ROPER.

1301 (11). H. GIGANTEUS L. Alien, N. America. Bristol, 1916, Miss I. M. ROPER; Elland, York, September 1916, E. C. HORRELL; Botley, Oxford, 1915, G.C. DRUCE.

1311 (4). BIDENS FRONDOSA L. Alien, America. Bristol, 1918, Miss I. M. ROPER. Det. A. THELLUNG.

1312. GALINSOGA PARVIFLORA Cav. Dr Thellung, *Allg. Bot. Zeit.* 6, 1915, describes a variety of this species as var. ADENOPHORA Thell. "Pedunculis involvulis involucrisque (praeter pilos simplices rariores) glandulis stipitatis dense obsitis, interdum solum glandulosis (pilis simplicibus deficientibus)." The type, var. GENUINA Thell., is characterised—"Pedunculis involucrisque eglandulosis vel parce glandulosis, illis pilis brevibus erecto-subpatentibus (ad 30 deg.) setulosis."

Forma SUBGLANDULOSA Thell. Alien, S. America. Guildford, Surrey, R. M. KENNEDY. Det. A. THELLUNG, 1918.

1320 (1). SCHKUHRIA BONARIENSIS Hook. & Arnott in Hook. Journ. Bot. iii., 321, 1841. Alien, Chile. Lanal. Pampas of Buenos Aires. Tweedside, Galashiels, Selkirk, October 1918, Miss I. M. HAYWARD. Det. W. B. TURRILL.

1322 (2). TAGETES MINUTUS L. Alien, America. Meanwood, Leeds, 1917, E. C HORRELL. Det. A. THELLUNG.

Gen. 313 (3). LONAS Adans. Fam. ii., 118, 1763.

1322 (10). L. ANNUA (L.), comb. nov. *L. inodora* Gaertn. Fr. ii., 396. *Atanasia annua* L. Sp. Pl. ii., 1182, 1763. Alien, Reg. Medit. On waste ground between Truro and Malpas, W. Cornwall, August 1912, F. RILSTONE. Named *L. inodora* Gaertn. by A. THELLUNG.

1344 (2). ANTHEMIS WIEDMANNIANA Fisch. & Mey. Ind. Sem. Hort. Petr. ii., 27, 1835. Alien. Asia Minor. St Philip's, Bristol. June 1911, J. W. WHITE. See *Rep. B.E.C.*, 229, 1917.

1353. CHRYSANTHEMUM LEUCANTHEMUM L., lusus vel var. DISCOIDEUM. Ligules absent. Sent by Miss TODD from Wickham, Hungerford, Berks, 1918.

1365 (7). COTULA ANTHEMOIDES L. Alien, Spain, &c. Plymouth, S. Devon, Mr SMITH in *Trans. Dev. Assoc.* xlix., 105, 1917; near Byfleet, Surrey, 1918, Miss M. COBBE.

1408 (23). SENECIO LIGULARIA Hook. f. Fl. Brit. Ind. iii., 349. Alien, Himalayas. Bonnington Lake, Herts, August 1918, Mrs JAMES, ex Miss TROWER.

1408 (24). S. SMITHII DC. Prod. vi., 412. Alien, Magellan. On the banks of a small tributary of the Don in N. Aberdeen I saw a huge *Senecio* which at a distance suggested *palustris*, but on closer acquaintance I found that it was this species of South American or New Zealand origin. How it came there was at first difficult to explain. I visited about a score of gardens in the adjoining village of Clongarff but in vain. Eventually, however, among the stones of a fallen house several plants were noticed. From this place it doubtless originated. The plant is a handsome species with large oblong-lanceolate leaves nearly a foot long by 4-5 inches across and an inflorescence recalling that of *Sonchus arvensis*.

1408 (25). S. CLIVORUM Maxim. in Bull. Acad. Pétersb. xvi., 220, 1871. Alien, China, Japan. On the margins of little Broad, South Repps, Norfolk, A. R. HORWOOD. Doubtless planted there.

1459 (4). CENTAUREA MACULOSA Lam., lusus ALBIFLORA Gugler. Alien, Europe. Woodhall Spa, N. Lincs, 1917, Rev. F. ALSTON, vice "*C. psammogena.*" See *Rep. B.E.C.* 37, 1917. It is not a hybrid as the pappus is well developed.

1641. HYPOCHOERIS GLABRA L. In immense quantities in sandy fields near Pyrford, Surrey, in two distinct modifications as pointed out to me by the Misses COBBE and Lady DAVY. Both forms are typical as regards the fruit characters, but they differ in habit and size. One is the usual, small, 10-20 cm., spreading, semi-prostrate plant with narrow leaves about 4-10 mm. across, the other is a stout, erect plant, 2 dm. or more high, with deep green, glossy leaves, 30 mm. across, achenes, including pappus, 20 mm. long, stout tap root. The aspect of the latter suggested *radicata* or a hybrid, but there seems no evidence of that species in it, the fruits being perfectly fertile.

1619. LACTUCA SERRIOLA L., var. INTEGRATA (Gren. & Godr. Fl. Fr. ii., 320, sub *L. Scariola* mihi. Alien. Found in the Canadian Mule Depot at Long Ashton, N. Somerset, in 1917 by Miss I. M. ROPER.

1687. OXYCOCCUS QUADRIPETALUS Gilib., var. PYRIFORMIS, var. nov. Baccis pyriformis. Methuen, M. Perth, August 1918. In the type the berries are globular—baccis rotundis. If retained in the genus *Vaccinium* it must be *V. Oxycoccus* L., var. or sub-var. *pyriforme* mihi. G. C. DRUCE.

1690. ARCTOSTAPHYLOS UVA-URSI Spreng., var. ANGUSTIFOLIA mihi. First found on An Teallach, W. Ross. See *Trans. Bot. Soc. Edin.* 149, 1894. Foliis anguste lanceolatis. Leaves narrowly lanceolate, 15 mm. long by 3.5 mm. broad.

1694. ERICA CINEREA L., lusus. Lieut. R. Whymper sent in September last from Wool, Dorset, a curious condition of heath in which the "inflorescence" is of claret colour, but the corolla-like growth seems to be entirely foliaceous, probably due to a gall or mite. Through Prof. I. Bayley Balfour's kindness we append the following note:—I find that the wine-coloured bud-like structures at the tips of the branches are vegetative shoots. Such tassel-like or bulbil-like shoots with shortened internodes and modified leaves are found on various species of *Erica*. They are of the nature of galls and are due to the action of larvae of species of *Perrisia* or to the larvae of a species of *Myricomyia*. The particular form the gall takes, whether a tassel-like bud as in the specimen submitted or a more solid bulbil-like shoot, depends apparently not only on the species of *Perrisia* or *Myricomyia* as the case may be, infesting the plant, but to some extent also on the species of *Erica* attacked; the same species of *Myricomyia* may produce galls slightly different in appearance on different species of *Erica*. Our collection of galls does not contain this one on *Erica cinerea*. It is similar in appearance to galls formed by *Myricomyia mediterranea* F. Löw, on *Erica vagans* Linn. and *Erica scoparia* Linn. It also resembles somewhat galls on *Erica carnea* by *Perrisia ericina* F. Löw. HARRY F. TAGG. I may add in addition to the above note by Mr Tagg, who has charge of the gall collection, which is a good one, that in Houard's *Les Zoocecidies des*

Plantes d'Europe there is a figure of the *Erica* gall of which your specimen is a form. I. BAYLEY BALFOUR.

1726. PRIMULA VERIS × POLYANTHA. In great abundance, along with *P. acaulis* and *P. veris*, in a meadow, but only in this one meadow, near Pullborough, Sussex, 1918, ALFRED WEBSTER. This striking and beautiful plant appears to be the first evidence of its occurrence in the naturalised condition in Britain. The foliage is that of *P. veris*, but the corolla lobes, which are of the size of *veris*, are of a rich blackish-brown colour with a bright gamboge-yellow base. *P. polyanthus* Miller is referred to *P. elatior* in *Ind. Kew.*, but Nicholson (*Gard. Dict.* vi., 182) says it is a hybrid of the Cowslip and Primrose. If that be so this Sussex plant is *P. veris* × (*P. veris* × *P. vulgaris*) = × *P. Websteri* mihi. Mr Chittenden, who kindly exhibited it at the Horticultural Society, says there is a cultivated hybrid between *P. vulgaris* and *P. officinalis* grown under the name of *P. variabilis*, and that these plants appear identical with it. G. C. DRUCE.

1733. LYSIMACHIA VULGARIS L., forma nova MACULATA. This year Miss TODD sent me from Shapwick Moor, N. Somerset, a specimen of the Loosestrife which had a brownish-crimson spot at the base of the corolla lobes.

1757 (2). CENTAURIUM SCILLOIDES Druce, var. PORTENSE (Brot.), comb. nov. In September this year, when I was in Scotland, Mr J. Arnett of Tenby, who has done so much for the botany of Pembrokeshire, sent me specimens of *Tunica Saxifraga* and two or three other plants which were put into drying sheets by my servant. On my return for a couple of days, before going away on another visit, I glanced through the great pile of specimens which had come in during my absence and seeing a loose flower in the same cover as Mr Arnett's specimens assumed it was a monstrous condition of *Centaurium* (*Erythraea*) which he alluded to in his note of September 6. After my return I had to make a systematic examination of the year's plants and then found, with one of the specimens of *Tunica*, a portion of a plant to which evidently the *Centaurium* flower belonged. This proved to be *Centaurium diffusum* (the *Erythraea diffusa* of Joseph Woods). Mr Arnett's specimens, having been gathered in N. Pembrokeshire on cliffs about 2 miles from Newport, are therefore the first certain evidence of this Atlantic species in England, to the flora of which it is a most interesting addition. In Europe this plant has a very limited range along the margin of Western France, Spain, and Portugal, but not reaching the Mediterranean. It grows on the sides of roads and in dampish places. Cherbourg is perhaps its nearest habitat to England. A form or race with white flowers occurs in the Azores in bushy places and on rocky soil up to 1000 feet. The plant is quite unlike our other forms of *Centaurium* in having a caespitose growth, with diffuse or prostrate stems, having many barren branches, which bear opposite, sub-orbicular or ovate leaves, narrowed into a short stalk ; flower-bearing stems erect, with distant, elliptic or oblong leaves ; flowers stalked, in a few, usually 4-5-flowered cymes ; corolla large, 15-20 mm., rose-coloured, the tube a little shorter than the ovate lobes which are 8-9 mm. long, and a little shorter than the bilocular capsule which is narrowed at the top. The whole plant is glabrous.

The name of this plant is not free from difficulty. There seems to be now a general agreement in recognising the earliest trivial for the Azorean plant in *Gentiana scilloides* of the younger Linnaeus (*Suppl.* 175, 1781), but the description * is so vague, and the colour of the flowers being said to be yellow, for more than half a century it was ignored. There is however at Paris Francis Masson's specimen from the Azores on which it is based and which has been identified as the plant that has received another name, *Erythraea Massoni* Sweet Hort. Brit. ed. 2, 363, 1830. This Azorean plant differs, inter alia, from the European in the colour of the flowers. Watson (Godman's *Nat. Hist. Azores* 195, 1870) says it is a widely varying species but he never saw a pink or rose-coloured example among the thousands which came under his notice. Mr P. B. Webb, a very able, critical botanist, emphatically declared his dissent from a union as one species of Wood's *diffusa* and the Azorean plant. It must be borne in mind that other Azorean species only differ slightly from their European congeners,—for instance, *Lysimachia nemorum* and *azoricum*, *Potentilla erecta* and *insignis*, and this may well be another example. M. Malinvaud held the two plants to be distinct species (*Bull. Soc. Bot. Fr.* xliii., 423, 1896). He says that the first exact description of the French plant is that under *Erythraea portenis* given by Hoffmannsegg & Link, *Fl. Portugaise* i., 351, t. 66a, 1809. It is based on the *Gentiana portensis* of Brotero Fl. Lusit. 278, 1804, the name being given on account of Oporto being the centre of its area. Le Jolis also considered it a distinct species, having seen it in 1840 in the landes near Hague, Manche. In February 1845 he submitted specimens and drawings to the Soc. Linn. de Normandie under the name *Chironia peploides* from the resemblance the leaves bear to those of *Peplis Portula*. The Commission of that body however only thought they were a very exceptional form of *C. Centaurium*, not a new species or even a variety (sic). Grisebach (*Mon. Gent.* 144, 1839) queries *scilloides* as a synonym and therefore keeps *portensis* separate even from *diffusa*. Joseph Woods, the author of the *Tourist's Flora* published (*Comp. Bot. Mag.* ii., pp. 263-282, 1836) his "Account of a Botanical Excursion into Brittany" and there (p. 274) he says on the 25th of May on a very rough piece of ground, at a very short distance S.W. of Morlaix he found "an *Erythraea* which appears not to have been noticed. Its characteristics are the diffuse mode of growth, without any indications of a leading stem, and the few [red] flowers, not above three in a panicle. This did not arise from late shoots, as the *Erythraea* had hardly yet begun to flower, and this may be considered as one of the earliest, nor had it been eaten by cattle for most of it was well protected by the prickles of the *Ulex* among which it grew, nor was it owing to that shelter, for some of it was in open and exposed situations. In all the appearance was alike and I should propose to call it *Erythraea diffusa*, caulibus diffusis, sub-bifloris." Woods says he has found specimens in *Herb. Smith* from the Azores labelled by him as being the *Chironia maritima* of Hort. Kew., but not of Willdenow. Aiton's *C. maritima* (Hort. Kew. ed. 2, ii., 6, 1811) is a mixture, partly the yellow-flowered *maritima* and possibly Masson's plant which it is said he introduced into Britain in 1777. Trelease (*Bot. Observ. Azores* 132, 1897) evidently considers the Azores plant distinct for he uses the name *E. Massoni* and quotes *E. diffusa* Drouet [*i.e.* non Woods]. He gives it as occurring in Corvo, Flores, Fayal, Pico, Terceira, San Miguel, and Santa Maria. Grisebach has not been very successful in treating of *Erythraea*. In his *Genera et Species Gentianarum* he gives full specific rank to both *E. diffusa* and *portensis*; he puts *Gentiana scilloides* among the " ignotae " and gives the Azores for *diffusa* the flowers of which are said to be " intensae roseae." In the *Prodromus* ix., 59, he gives the Morlaix locality, but wrongly puts in Britannia for *diffusa* and on p. 561 gives *latifolia* for the Azores where it has not been found. In it he expresses his idea that the localities of *Massoni* belong to *diffusa*, and, quoting from Seubert, suggests that *G. scilloides* is the Azorean plant because the younger Hochstetter found only the plant of Woods there. As a matter of fact Hochstetter says he found two forms (a) forma *major*, in which the colour of the flowers is not mentioned, and (b) forma *pumilior*. . . foliis duplis minoribus, caule longe, decumbentibus apice subunifloris. . . flore albissimo, which grows in meadows and among rocks from 500-2000 feet in Terceira. M. Drouet (*Cat. Fl. Iles Açores* 1857) gives both *Massoni* and *diffusa* putting between them the yellow-flowered " *maritima*," and then again adding the same plant as " *lutea* " after them both. His catalogue gives seven species, and Seubert two only, but both these are wrongly named. Other botanists unite the Azorean and the European plant—*e.g.*, Puel (*Bull. Soc. Bot. Fr.* 502, 1860) says that Masson's plant in *Herb. Paris* is identical with *E. diffusa* Woods and he uses the name *E. scilloides* Chaub. *in Herb.* for both. This is also the view of Lange in Willkomm & Lange *Prod. Fl. Hisp.* 1870 and of Rouy (*Fl. Fr.* x., 244, 1908) but he calls it *E. Portensis*. In *Index Kewensis Gentiana scilloides* L. f., *G. portensis* Brot., *E. nummulariifolium* Steudel and *E. diffusa* Woods are all referred to *E. Massoni* Sweet, a name which is absolutely untenable except on the assumption that *scilloides* is not the Azorean plant. Nyman (*Consp. Fl. Europ.* 502, 1878-82) retains the name *E. diffusa*, citing *scilloides* as a synonym, and gives as its distribution " Brit., Gall., bor-occ. Hisp., bor-occ. (Galeoc.) Lusit." This (see also DC. *Prod.* ix., 561) therefore suggests that Nyman (who is also followed too religiously by Rouy, *l.c.* and Lange, *l.c.*) had seen the plant from Britain. Nyman usually discriminates between Anglia and Scotia and when Brit. is used by him it conveys the impression that the plant occurs in both countries. There is no previous evidence of it as a British plant in our floras before Mr Arnett's discovery. How did this record creep into literature?

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* "Caule unifloro, ramoso, foliis obovatis, obtusis, trinerviis. Corolla infundibuliformibus quinquefidis, bracteis binis . . . . Limbus . . . . luteus."

The explanation is very simple. Grisebach (DC. *Prod.* ix., 59) has made a mistranslation. He saw that an Englishman had found *diffusa*, and he publishes it from "Pr. Morlaix in Britannia, Woods," instead of Brittany in France in which Morlaix is situated. Under *E. diffusa* the plant is figured in Nicholson's *Gard. Dict.* iii., 530 and briefly described as "flowers bright clear rose, leaves fleshy, shining, generally concave; height 2-3 in.; perennial. A charming little rock plant." W. Robinson (*Alpine Flowers for Gardens* 223) speaks of it as a beautiful and rapid grower with a profusion of pink blossoms in the summer. The plant is therefore known in cultivation.

The question arises—is this new *Centaurium* native? It would seem that where it grows, unless intentionally introduced by some mistaken disciple of Maurice Hewlett, it has that claim. Its cultivation in rock-gardens makes it more easy for a stupid, irrational person to plant it. Recently it has come to my knowledge that a large number of seeds from a seed warehouse were mischievously scattered on the waste places bordering Kingsway and elsewhere, which may account for some of the aliens which appeared there. On the other hand the distribution of *portensis* on the continent suggests that it is not an unlikely plant to occur. It might well be found in the Channel Isles and N. Devon or Cornwall, but it is so striking a plant as not easily to be overlooked. Then the question arises—if this Pembroke locality is the only British one, is it a dying-out species, or, as would seem probable, is it not a more recent immigrant, brought by wind-borne seeds or more likely by some bird visitor? To whichever of the three grades it may eventually be proved to belong, its discovery by our member, Mr Arnett, in Pembrokeshire is one on which he is highly to be congratulated.

For much of the following synonymy I am indebted to the note by M. Malinvaud (*op. cit.*), but I have given them in greater detail :—

Gentiana scilloides L. fil. Suppl. 175, 1781.

G. portensis Brotero Fl. Lusit. i., 278, 1804.

Erythraea portensis Hoffmannsegg & Link Fl. Portug. i., 351, t. 66a, 1809. G. L. Schmidt Mon. Erythraea 42, 1828. Rouy Fl. Fr. x., 244.

Chironia maritima Ait. Hort. Kew. ed. 2, 6, 1811, p.p., non Willd.

Erythraea Massoni Sweet Hort. Brit. ed. 2, 363, 1830. Watson in Lond. Journ. Bot. 596, 1844. Ind. Kew. ii., 895, 1893. Trelease Bot. Obs. Azores 132, 1897.

E. diffusa Woods in Hook. Comp. Bot. Mag. ii., 274, 1835. Hook. in Ann. & Mag. Nat. Hist. i., 437, t. 16, 1838. Seubert Fl. Azorica 36, 1881. Le Jolis in Ann. Sc. Nat. t. 15, Avril, 1847. DC. Prod. ix., 59, 561. Gren. & Godr. Fl. Fr. ii., 485, 1850.

E. scilloides Chaub. in Herb. ex Puel in Bull. Soc. Bot. Fr. vii., 502, 1860. Lange in Willk. & Lange Prod. Fl. Hisp. ii., 664, 1870. Corb. Nouv. Fl. Normandie 391, 1894:

Centaurium scilloides (L.fil.) Druce in Rep. B.E.C. 614, 1916. Exsicc.: Wittrock, n. 48.

The generic name *Centaurium* was employed by Dodoens (*Stirpium* 333, 1583), Caspar Bauhin (*Pinax* 278, 1623), and as *Centaurium minus* by Tournefort 122, 1700, Dillenius Ray *Syn.* 286, 1724, and Gerard, 437. It was first restored after 1753 by Hill in *Brit. Herbal* 62, 1756, a name which has priority and which is accepted by Schinz, and (as *Centaurion*) by Rendle & Britten. *Erythraea* was first used by Paul de Renealme in *Sp. Hist. Pl.* 77, 1611, where it is beautifully engraved on the same plate with *Chlora*, as *Erithraea* based on *Centaurium minor*. Linnaeus ignored it and put the type as *Gentiana Centaurium*, followed by Necker (*Elem.* ii., 10, 1790), and as *Erythraea* it is used by Borck (*Roem. Archiv.* i., 1, 1796). The name, appropriate enough as it is to our British plant, does not fit the yellow-flowered section.

One may add that I did not see *scilloides* when I was in the Azores in the early spring of 1909, but I collected a form of *Centaurium ramosissimum* (Pers.) Druce = *C. pulchellum* Druce in the crater of Furnas, San Miguel, sufficiently distinct from the British plant to deserve varietal rank, *i.e.*, var. *azoricum* Druce in Journ. Bot. 27, 1910.

1781 (5). HELIOTROPIUM CURASSAVICUM L. Alien, tropics. Pye Hall Farm, W. Suffolk, 1917, A. R. HORWOOD. Det. A. THELLUNG.

Gen. 118 (3). PLAGIOBOTHRYS Fisch. & Mey. Ind. Sem. Hort. Petrop. ii., 46, 1835.

1785 (10). P. TENELLUS A. Gray in Proc. Amer. Acad. xx., 283, 1885. Bristol, 1918, Mrs SANDWITH. A new alien to Europe. Det. A. THELLUNG.

1831 (3). VOLVULUS DAHURICUS (Herbert) Druce. *Convolvulus dahuricus* Herbert in Bot. Mag. t. 2609, 1826. *Calystegia dahurica* Fisch. Alien, Siberia. Radice sarmentosa, caule volubili, tomentoso, herbaceo; foliis oblongo-cordatis, uniflorus, glabris, margine et nervis subtus tomentosis; pedunculis axillaribus uniflorus, tomentosis, margine repando; bracteis binis late ovatis; calycis foliolis lanceolatis, acutis duobus exterioribus latioribus; corolla roseo-purpurea; styla filamentis longiore. Differs from *sepium* in having the bracts proportionately broader and less acuminate; flowers smaller, rose-coloured; stalks, petioles and peduncles downy. See *Rep B.E.C.* 233, 1917. From a thicket by road-side near Rhyd-y-mwyn, Flintshire, August 29, 1906, C. WATERFALL.

1833. CONVOLVULUS ARVENSIS L., forma. . Plants with pure white flowers and broad, large, roundish, auricled leaves, 50 mm. by 40 mm. have been seen for some years on the Woodstock Road, near Oxford, by Mr TROLLOPE.

1872 (11). ALONSOA INCISIFOLIA Ruiz & Pavon Syst. Veg. 154. 1798. Alien, Peru. Hortal. In a cut down wood near Failand, N. Somerset, 1917, Rev. E. ELLMAN, ex Mrs SANDWITH. Det. W. B. TURRILL, 1918.

1873. LINARIA VULGARIS Mill., var. SUBGLANDULOSA (Braun-Blanquet in Sched. ad Fl. Rhaet. Exsicc. 24, 1918, as a var. of subsp. *vulgaris* Br.-Bl.). Pedunculis glandulosis, caulibus et foliis glabris. This seems to be synonymous with var. *pulchella* Druce Fl. Berks. 370, 1897. It was distributed through the Club in 1891. See *Rep B.E.C.* 341, 1891.

1879. L. CHALEPENSIS Mill., forma CLEISTOGAMA Thell., forma nova. Corolla minima, 1½ mm. longa, albida, ecalcarata, semper clausa (cf. E.H.L. Krause in Beih. Bot. Centralb. xxxv., abt. 2, H. 1, 150, 1917). "Spornlose Kleistogame Pelorie." Adventitious in Switzerland—Zürich, 1913, Thellung; France—Strasbourg, E. H. L. Krause, *l.c.*; and Holland—Gorinchem, 1912, Henrard. Elland, York, 1916, E. C. HORRELL. Det. A. THELLUNG.

1903. DIGITALIS PURPUREA L., var. PUBESCENS E. A. Saunders. Var. NUDICAULIS E. A. Saunders in Journ. Genetics vii., 1918. In the latter the stem is green, polished and smooth from the base to the flowering region where it becomes pubescent, and the leaves are less hairy. Both the above breed true.

1906 (1). VERONICA PSEUDOCHAMAEDRYS Jacq. Fl. Austr. i., 37. *V. latifolia* L. herb., non Sp. Pl. *V. Teucrium* L., sub-sp. *Pseudochamaedrys* Nym. Consp. 545. Alien, Europe. Quite naturalised near Reigate, Surrey, H. E. S. T., ex C. E. SALMON.

1911. EUPHRASIA ROSTKOVIANA Hayne, var. MINOR (Gaudin Fl. Helv. iv., 110, 1829, under *E. officinalis*). Heathland, East Winch, 1918, F. ROBINSON. LUMB and PEARSALL refer to it in *lit.* to var. *minor*. Gaudin laconically describes it as "floribus parvis."

1951 (2). RHINANTHUS ALECTOROLOPHUS Pollich Hist. Pl. Pal ii., 177, 1777. *R. hirsutus* Lam. Fl. Fr. ii., 353, 1778. *Alectorolophus Alectorolophus* Sterneck. This plant has a wide continental distribution, occurring in Belgium, France, Luxemburg, Italy, Switzerland, Germany, Austria, Hungary. Exsicc.: Fl. Exsicc. Austr. Hung. 137, 1602. Billot Fl. Gall. et Germ. 1125, 1289 bis and ter. Reichb. Fl. Exsicc. Germ. 1513. Baenitz Herb. Europ. 3924. Figs.: Reichb. Ic. Crit. viii., t. 976. Ic. Fl. Germ. xx., fig. 118. The chief difference between this and *R. major* is in the calyx which in *major* is glabrous, but in this it is strongly reticulate and covered with a dense indumentum of long and short hairs mixed; seeds broadly winged. It may be added that Rouy unites *major* and *Alectorolophus* under one species which he calls *A. grandiflorus* Wallr., but that Nyman treats it as a sub-species *R. hirsutus* Lam. Sterneck in his *Monograph* keeps it distinct, and, following Koch, *Syn.* 544, 1837, I also retain it in that grade under its oldest trivial. Mr W. P. Hiern tells me it was first found in June 1885 in Knowlstone parish, N. Devon, by the Rev. W. Moyle Rogers, and then a solitary plant was found by himself in North Molton parish in 1912 and recorded in *Trans. Devon Assoc.* 1913. The question arises as to whether it is native or adventitious in N. Devon. Mr Hiern, in *lit.* December 23, 1918, says it does not appear to be indigenous but only a non-permanent casual in cultivated lands.

1968. Orobanche Hederae Vaucher ex Duby, sub-var. monochroa Rouy Fl. Fr. xi., 190, 1909. Var. *monochroa* Beck Mon. 260. This is, as its name suggests, a one-coloured plant, being very pale yellow or almost white. It occurs at Creux, Sark; Berry Head and Torquay, S. Devon, G. C. Druce.

1986 (2). Verbena tenera Sprengel Syst. ii., 750. *V. pulchella* Sweet. Alien, Argentina, Brazil. Hortal. Introduced from Brazil in 1827. Rubbish tip, Bedminster, Bristol, 1918, Miss Cobbe. Det. W. B. Turrill. A much branched, creeping perennial with deeply cut foliage and violet long-tubed flowers.

1990. Mentha longifolia × spicata. Holyhead, Anglesey August 1917, G. C. Druce.

2003. Lycopus europaeus L., var. glabrescens Schmidely Annot. au Cat. des Pl. Vasc. de Genève in Bull. Soc. Bot. de Genève iii., 129, 1884. Tige glabrescente, fistuleuse, à moelle se résorbant assez vite dans les entrenoeuds moyens, parsemée ça et là poils étalés. Feuilles assez largement lancéolées, aigues ou acuminées au sommet, ± brièvement atténuées à la base, glabrescentes sur les deux faces, à nervures legèrement pubescentes en dessous, mesurant 6.5 × 2.5-3 cm. de surface." Briquet *Lab. Alpes Marit.* 117, 1891. Exsicc.: Fiori & Beg. n. 1949. Odiham marsh, N. Hants, 1900, G. C. Druce and Miss C. E. Palmer; West Drayton, Middlesex; Banbury, Oxford, 1842, Beesley; Yardley Gobion, Northants, 1873; Lighthorne, Warwick, 1852, Miss C. E. Palmer; Aldcliffe, N. Lancashire, 1838. This seems to be the common British form.

2003. L. europaeus L., var. pubescens Benth. in DC. Prod. xii., 178, 1848. This has the stem, especially at the angles, more or less clothed with shaggy white hairs, and the leaves on both surfaces, and especially on the veins of the under surface, furnished with pluri-celled white hairs. The leaves vary in the apices of the leaf-segments being more or less obtuse or almost acute and also in the depth of cutting, the surface measuring about 60 × 25-30 mm. Grande Mare, Guernsey, Bishop Mitchinson; Garlieston, Wigton, 1912, and as a form with deeper incised leaves with acute segments from Ellesmere, Salop; also with broader leaves from Barlaston, Stafford. There is scarcely room for another variety based on such a variable character as the leaf-clothing so I put these plants to *pubescens* as defined by Briquet, *l.c.* " Tige peu fistuleuse, converte, surtout sur les angles, d'une pubescence courte. Feuilles ± largement lancéolées, aigues ou obtusiuscules au sommet, brièvement pubescentes en dessus et en dessous, à pétiole velu, mesurant 5.5-6 × 3 cm. de surface."

2057. STACHYS PALUSTRIS L., var. OBLONGIFOLIA Briquet Lab. Alp. Marit. 248, 1891. Leaves oblong, shortly acuminate or simply pointed at apex, measuring 4-8 × 1.5-3.5 cm., the cutting either crenate or dentate, the tops of the teeth or crenatures about 1-2 mm. high, each separated by a space of 2-7 mm. This seems to be our common form. Hinksey, Tilehurst, Berks: (petioles shortly stalked), Winchelsea, Sussex, &c.

2060. S. OFFICINALIS Trev., var. NANA Druce, forma ALBA. Some years ago I brought back from the Lizard a dwarf form of the Wood Betony which I was surprised to find retained its dwarf character in cultivation. It makes a pretty rock plant, very different from the rather coarse, straggling, woodland species. Some years ago Mr R. Irwin Lynch of Cambridge found at the Lizard a white form of the same plant which is figured and described as *S. Betonica*, var. *alba* in the *Gardeners' Chronicle* 127, 1918. It is, he says, from 5-7 in. high, forming one " of the most beautiful rockery plants." It is easy of cultivation by division. Var. *nana* also at Freshwater, Isle of Wight.

2079. TEUCRIUM SCORODONIA L., forma CRISPUM. See *Rep. B.E.C.* 49, 1917. Miss Rayner's experiments show that the crisped character is not perpetuated by seed, therefore the varietal grade given it is too high. See Miss M. C. RAYNER in the *Journal of Genetics* vii., 1918.

2085. AJUGA GENEVENSIS L. On June 14, 1918, our member, Miss FRY, brought me a Bugle found by her the preceding day on the Berkshire downs which, having compared with a plate in Hill's *Herbal*, she thought might be *Ajuga alpina*. There was, however, no doubt that the specimen was *A. genevensis* L. On the 17th of June under Miss Fry's guidance I visited the habitat and saw the plant which was scattered among grass under the shelter of furze bushes on a remote spot on the Berkshire downs. The nearest building is a farm above a quarter of a mile away. The plant is not in cultivation in the area. Although in small quantity it has the appearance of being native, therefore it is one of the most interesting discoveries of recent years. Its distribution given in Nyman's *Conspectus*, where it is given full specific rank, is Scandinavia, Belgium, France, Switzerland, Germany, Italy, Istria, Austria, Hungary, Slavonia, Transylvania, Croatia, Dalmatia, Montenegro, Herzegovina, Bosnia, Serbia, Macedonia, S. Russia and Moldavia,—a distribution which favours its being a native of Britain.

Linnaeus (*Sp. Pl.* 561, 1753) tersely and inadequately describes it as *Ajuga foliis tomentosis calycibus hirsutis*, giving a synonym, *Bugula carneo flore* Clus. Hist. ii., 43. Koch (*Syn.* 575, 1837) more clearly diagnoses it as " floribus verticillatis, stolonibus nullis, bracteis inferioribus trilobis, dentatis, integerrimisque, superioribus verticillo brevioribus. In campis arenosis, ericetis ad vias. Flores caerulei vel carnei." Grenier and Godron (*Fl. Fr.* ii., 707) admirably describe it as a species distinct from *reptans* and *pyramidalis*. Glomerules of 3-4 flowers, forming an elongated spike which is interrupted nearly throughout; floral leaves sessile, the upper ones bluish, the lower ovate, unequally crenate, the middle trilobed, the upper shorter than the flowers; calyx softly woolly, teeth unequal, lanceolate, pointed, shorter than the tube; corolla of a clear blue or rose, tube elongate, cylindric, the lower lip with spreading lobes, the middle obcordate; radical leaves upright, perishing before the flowering period; lower stem leaves small, oblong or longly attenuate, wedge-shaped, crenulate at the top, the upper shorter but broader and more strongly crenulate, all of a whitish-green and very hairy; stem upright, simple, hairy throughout; rootstock very short, not creeping, always without stolons; plant 1-3 dm., very hairy. The plant, as we shall see, has been confounded by some botanists with *A. pyramidalis* (*cf.* Bentham *Brit. Flora* 205, 1916), but is easily distinguished by the foregoing characters. *A. pyramidalis* has a dense, tetragonous-pyramidal inflorescence with bracts broadly ovate, obtuse, entire or feebly sinuate, and always longer than the flowers, narrowing in the inflorescence from below upwards, as the name suggests: lower leaves large, persisting after the flowering period, making a spreading rosette appressed to the soil; stem short and very leafy; rootstock oblique, truncate, without stolons. This latter character separates both species from *A. reptans* which has leaves more glossy and glabrous and less deeply crenate and not conspicuously wedge-shaped; flowers of a more washed out tint; radical leaves persistent. Only rarely *reptans* fails to produce stolons, but the hairiness, the leaf-shape and the flower-colour offer differentiating characters.

Rouy (*Fl. Fr.* xi., 226, 1909) adopts a different treatment from that of his illustrious predecessors, Grenier & Godron. He unites *reptans*, *genevensis*, *alpina* and eight other sub-species under one species, *A. vulgaris* Rouy. One of these sub-species, *A. Knafii* Rouy, as we shall see, he identifies as British, another, *A. alpina*, is a plant of the Alps, (?) Pyrenees, and northern Europe, differing from *genevensis* in the larger radical leaves, and in the bracts not being trilobed or strongly dentate but entire or feebly crenulate. There is no doubt that the species of the *reptans* group freely hybridise (hybrids of *reptans* and *pyramidalis* have been seen by me in Scotland and Ireland), but neither the hybrids, nor the variations which are numerous, are sufficiently near *genevensis* to lower the claims of the latter to specific rank. Even botanists with an idea of big species, such as Bouvier (*Flore des Alpes*), Archangeli (*Fl. Ital.*), Koch (*Syn. Fl. Germ.*), Bentham (*Labiatae*), Coste (*Fl. Fr.*) and Briquet (*Lab. Alp. Marit.* p. 102), who puts *alpina* L. as a synonym, give it specific grade. Bentham (*Labiatae*) kept *genevensis*, *reptans* and *pyramidalis* distinct species. In the *British Flora* he made *genevensis* the type of which *pyramidalis* is a variety, suggesting that it was a condition, but he adds that the type is not British. Therefore this Berkshire record is the first trustworthy or definite publication of *Ajuga genevensis* as a British plant. There are previous records, but these are probably errors of identification, or they lack confirmatory evidence, so that the plant is not included in our more recent Floras and only appears in the *British Plant List* as an alien on the authority of Sir J. D. Hooker's Lanarkshire record.

The history of these records may not be unwelcome. It may help to disentangle the mingling of truth and error, but its main object is to induce botanists to make a search on the two hills afterwards referred to, in order to ascertain what form of *Ajuga* still grows there. The first mention of a Bugle in British literature, different from the common one, is on the authority of Johnson (*Mercvrii Botanici pars altera. . . . in Cambria descriptio* 11, 1641). He there describes his journey from Beaumaris to Bangor, his toilsome ascent of " Carnedh-llewellyn " in trying circumstance, his lazy guide, the dense mist, the danger from the attacks of eagles, and the fear of approaching to the edge of the precipice where the best plants grow, so that they were rewarded by finding only two of note, one, a viviparous grass, "*Gramen sparteum spica foliacea majus*" and the Bugle, "*Consolida media flore caerulea Alpina.*" This has been interpreted by some authors to mean *genevensis*, while others refer it to *pyramidalis*, but W. A. Clarke thought it was only a form of *reptans*. Ray (*Cat. Pl. Ang.* 48, 1670) however refers it to *Bugula caerulea Alpina* Park. The *Consolida media caerulea Alpina* C.B. which is probably *genevensis* Ray says " found by Dr Johnson (*loc. cit.*) it hath not yet come in my way in England." He repeats this in the second edition (133, 1677) and in the *Synopsis* (85, 1690), merely adding the distinguishing characters separating it from *reptans*, *i.e.*, " A praecedente differt caulibus ab una radice pluribus erectis, foliis minoribus, longioribus et profundius in caule crenatis, quodque clematis careat." Without change it is repeated in the editions of 1696 and 1724. From his similar reference to it in the *Historia* (575, 1686) it is evidently *A. genevensis* which Ray had in his mind. Hudson (*Flora Anglica* 220, 1762), however, takes a different view and names Johnson's plant from the Carnedd as *A. pyramidalis*, quoting Plukenet's plate t. 18, f. 3 for it. Plukenet's figure, not from a British specimen, is however *genevensis*. In the second edition (249, 1778) Hudson adds under *A. pyramidalis* a Scottish locality " supra montem Ben Nevis dictum in Scotia, D. Hope." With *A. pyramidalis* Withering (*Nat. Arr.* i., 348, 1776) also identifies Johnson's plant, and so does Stokes (*With. Bot. Arr.* ii., 588, 1787), where the Burn of Killogower and the Ord of Caithness are given as additional localities. These it may be added certainly refer to *pyramidalis*, not to *genevensis*. Smith (*Eng. Bot.* t. 477, 1798) under *A. alpina* says he has received specimens from Durham from Robson and " from the summit of a mountain near Castleton by Dawson Turner," and adds there is no doubt of its being the *alpina* of Linnaeus. In the

Notes on the Drawings for English Botany there is a reference to the leaf at the bottom of the plate "traced from an English specimen." It would seem almost certain that the figure was drawn from Robson's garden plant and not from Turner's Derbyshire specimen and, as we shall see, it is not *alpina*. Smith (*Flora Britannica* ii., 604, 1800) follows *Eng. Bot.* in calling both the Welsh and the Scotch plant *A. alpina*. "Durham, Mr Robson. On the summit of a mountain near Castleton, Derbyshire, Mr Dawson Turner," are again given as localities. In the *English Flora* (iii., 64, 1825) Smith gives *A. alpina*, which he says is the *pyramidalis* of Hudson (and therefore of Ray whom he cites) and the *generensis* of Withering. He gives the Carnarvonshire, Derbyshire and Durham localities and adds "on the mountains of Aberdeenshire, not uncommon, Mr David Don." Under *A. pyramidalis*, which is fairly well described, he gives only the Ben Nevis locality but adds Aichaltie, Ross-shire. In this arrangement he had been forestalled by Gray (*Nat. Arr.* ii., 368, 1821) who called the plants *Bugula*, not *Ajuga*. Hooker (*Flora Scotica* 178, 1821) in the same year also adopted that arrangement, but says that of *A. alpina* he had never seen British specimens. (There can be little doubt that David Don's *alpina* was scionless *reptans*). Indeed Hooker (*Brit. Flora* 253, 1842), while mentioning *alpina* from Wales, Derbyshire, Durham, and Cave Hill, Belfast, says he has seen no British specimens and the Scotch ones, so-called, have proved only *reptans*. Hooker and Arnott (*Brit. Flora* 324, 1855) write that the *alpina* they describe is *genevensis* but that they have seen no British specimens, that the Scotch ones have proved to be *reptans*, and that the Durham specimen of *alpina* is denied by Winch. Turner and Dillwyn in the *Botanist's Guide* (88, 1805) state *A. alpina* was seen by Mr Griffith on the flat near the summit of Carnedd-Llewelin and on p. 251 says "it is erroneously stated in *English Botany* that this plant has been found in Durham by Mr Robson, for the specimen he sent to Sowerby was from his own garden." If this statement be correct it goes far to explain the curious drawing of the *English Botany* plate which represents neither *A. alpina* (for which it is figured) nor *generensis*, but is identified by Rouy (*Fl. Fr.* xi., 231, 1909) as *A. Knafii*, var. *Smithiana* Rouy, which is said to be a hybrid of *A. pyramidalis* and *genevensis*, neither of which is there any reason to believe grows in Durham, but which might well have come from the continent through horticultural sources to Robson's garden. Turner (*op. cit.* 188) however gives a locality for *A. alpina* for Derbyshire " on the mountain that leads from Matlock into the town of Castleton, on the left hand side, immediately adjoining the road " (not as stated by Smith on the summit), which it is presumed refers to the Peak. W. R. Linton (*Flora of Derbyshire* 246) makes two statements neither quite accurate, but he evidently had not seen *alpina* in that county. Babington (*Manual* 254, 1847), under *A. alpina*, repeats the Durham, Derby, and Belfast localities and cites *Eng. Bot.* t. 477. In 1851 (*Manual* 255) he omits the Durham locality and says he has seen no British specimens, and in the *Manual* (279, 1874) leaves out all localities and says *Eng. Bot.* t. 477 seems to be *genevensis*. Sir J. D. Hooker (*Student's Flora* 332, 1884) merely says " a form without stolons (var. *pseudo-alpina*) has been mistaken for *alpina*, an exotic species." H. C. Watson (*New Bot. Guide* 263, 1835) queries Turner's record of *A. alpina* for Derbyshire. Gardiner (*Flora of Forfarshire* 144, 1848) gives a very definite record of *A. alpina* which is, " found by Prof. Graham by a stream falling into the White Water, Clova, above the falls: only two specimens found," but Watson (*Cyb. Brit.* ii., 250, 1849) says he was with Graham when the plants were gathered in 1831 and " one of them is in my own herbarium, undistinguishable from *A. reptans*, according to my eyes." To me this is scionless *reptans*. In the *Comp. Cyb.* pt. 2, 271 he says it was simply misnamed. Syme (*Eng. Bot.* vii., 87) says that the British plants recorded as *A. alpina* are partly *reptans* and partly *genevensis*. Evidence in support of the latter statement is yet wanting. Under *A. genevensis* Syme quotes the *Eng. Bot.* figure which does not represent it, and the Durham record which has been shown to be from a garden, but adds that " Dr J. D. Hooker many years ago sent Mr Watson a specimen among plants collected in Lanarkshire. There is also an example of it from Wales in Buddle's Herbarium." Watson (*Comp. Cyb.*) says of " *A.* (*reptans*) *alpina*, scarcely a var.," and of " *A. genevensis*, casual or alien. From gardens? " This scarcely expresses the facts. If an *Ajuga* distinct from *reptans* was found by Johnson on Carnedd Llewellyn and by Dawson Turner on the Peak it could scarcely be of garden origin. though that might describe the Lanarkshire plant of which unfortunately no details are given. There remains still another allusion to an alpine Bugle. It is that by Ray (*Syn.* 238, 1690) who gives "*Bugula caerulea Alpina* Park. Found in Stokenchurch Wood by Mr Bobart." This record is ignored by Bobart himself (*Hist. Oxon.* ii., 391, n. 2, 1699) as he only refers to a colour variety of *A. reptans* which he calls "*Bugula media flore carneo. Consolida media pratensis purpurea* C. B. P. Praecedenti similis est (*A. reptans*) minor quadantenus est planta, floresque carnei coloris profert; quoad caetera non absimilis. In Agro Oxoniensi in sylva haud longe a villa Stokenchurch dicta nos comitibus usi D. Davis M.D. & D. Branker A.M., in Plantarum inquisitione versati, triginta abhinc annis hanc Bugulam sponte nascent reperimus." But which he was unable to find in after years. The specimen is merely the pinkish-flowered form of *A. reptans*. Under *A. genevensis* he makes no reference to an Oxford plant and we may safely presume that he at first thought this colour variant of *reptans* was another species which Ray inserted in the first edition of the *Synopsis* but subsequently allowed to sink into oblivion.

To sum up these discursive notes, it seems quite obvious that all the Scottish localised records refer to *A. pyramidalis*. The Irish record for Cave Hill is ignored by the authors of *Cybele Hibernica*. Robson's plant is shown to be a garden specimen and Sir J. D. Hooker's Lanark specimen, which is correctly identified as *genevensis*, was probably of adventitious origin for he does not refer to it in his Flora. There remain, however, two precise statements of the occurrence of a Bugle distinct from *reptans*, *i.e.*, those of Johnson and Dawson Turner, both good botanists. An examination of the habitats referred to might still reveal the presence of an *Ajuga* other than *reptans*, but it is rather unlikely that the damp mountainous localities would yield the sun-loving, dry-soil *genevensis*, for which at present we can only cite Berkshire as a native home in Britain.

2092. PLANTAGO LANCEOLATA L., var. SYLVATICA Pers. Syn. i., 138, 1805, with the very terse and inadequate description, "altior, spicis longis cylindricis." Under the above name Mr E. G. Baker identifies plants collected by Mr C. E. BRITTON on the roadside from Ewell to the Downs, Surrey, September 1917. The leaves are about 27 cm. long including the stalk, and 15 mm. broad, and the spikes are about 80 mm. long. This name is also adopted by Rouy *Fl. Fr.* x., 130. In the *Manual* 262, 1847, Babington described a var. *elata*, " spike very long and cylindrical, scape often 2 feet high and leaves 1½ feet long," which he said was not the true *altissima* L. according to Koch. In *Eng. Bot.* ed. 3, vii., 171, Syme described a var. *major*, " leaves with long, distinct petioles, erect. Scapes erect, scarcely curved at base. Spikes cylindrical or oblong-cylindrical. Bracts and sepals marked with fuscous or black blotches. In grass fields and meadows." In the 1856 edition of the *Manual* Babington drops the variety and simply treats it as a condition of habitat. This seems its true position. Whether the differences given by Syme are sufficiently persistent to warrant varietal distinction is worth investigating. His plant seems common in Scotland.

2092. P. LANCEOLATA L., var. SPHAEROSTACHYA. In 1848 a root of this variety from the Sands of Barry was planted in Mr G. Lawson's garden at Seafield, Dundee. The plant remained for some months in the border without undergoing any visible change, retaining its woolly appearance and stunted habit as on the sandy downs. When the warm weather came round, however, it began to increase in bulk at a more rapid rate, and assumed a much more luxuriant appearance. It soon extended itself to considerable size, lost all its woolliness about the base of the leaves, and produced a profusion of flower-heads corresponding entirely with the common forms of *P. lanceolata* as found by the waysides. George Lawson in *Bot. Gazette* i., 35, 1849. This was my own experience with a plant brought from the Quenvais, Jersey in 1906, and also the experience of Dr Richardson with Welsh specimens.

2114. AMARANTHUS CHLOROSTACHYS Willd., var. PSEUDO-RETROFLEXUS Thell., sub-var. ARISTULATUS Thell. Bradford Sewage Works, 1917, J. CRYER and E.C. HORRELL. Det. A. THELLUNG, who adds " Forsan var. vel sub-sp. propria." See *Rep. B.E.C.* 207, 1915.

2116 (5). A. THUNBERGII Moq., forma nova MACULATUS Thell. Alien, Africa austr. Foliis in medio maculis rubris notatis. Bradford, August 1917, J. CRYER. Det. A. THELLUNG, 1918.

2122. CHENOPODIUM MURALE L., forma PAUCIDENTATUM Beck. Alien, Europe. Sandal, York, 1916, E. C. HORRELL. Det. A. THELLUNG, 1918.

2135 (5). MONOLEPIS NUTTALLIANA Engelm., forma MINOR (Moq.) Thell. *M. trifida* Schrad. Bristol, W. Gloster, 1917, Miss I. M. ROPER. Det. A. THELLUNG. See *Rep. B.E.C.* 208, 1915.

2171. POLYGONUM LAPATHIFOLIUM L., var. PUNCTATUM Gremli Fl. Switz. 337, 1889, et ed. 5, 1885. Differs from the type in having golden glands on the underside of the leaves, as well as on the perianth. Swanage, Dorset, J. GREEN; St Peter's Marsh, Bristol, 1917; Falmouth, Cornwall, E. THURSTON; Hayes, Middlesex; Leicester; Glen Roy, Westerness, 1891, G. C. DRUCE. Probably a common British form, indeed Syme says the perianth of *lapathifolium* is rough with small yellowish glands. The variety is not mentioned in our British Floras.

2191 (2). P. SACHALINENSE F. Schmidt in Maxin. Prim. Fl. Amur. 233. Alien, Saghalien Island. Marston brick-yards, Oxford September 1917-18, growing with *P. cuspidatum* and, like that, doubtless originating from rubbish from the Botanic Garden.

2210 (11). RUMEX GIGANTEUS Ait. f. Hort. Kew. ed. 2, ii., 323, 1810. Alien, Sandwich Isles. Marston brick-yards, Oxford, July 1918, G. C. DRUCE. Doubtless from the Botanic Garden.

2217. VISCUM ALBUM L. On pear at Belvoir Castle, Leicester, *Gard. Chron.* December 1917; Brynwyn, near Hereford, [several instances of it growing on pear are given in the Hereford *Flora*]. On oak at Hackwood Park, Hants, [known there in 1864, see *Herb. Hill*]; Leigh Woods, N. Somerset, Miss I. M. ROPER; Stoulton, Worcester; Sherwood Forest, Notts; Windsor Forest, Berks; Richmond Park, Surrey, Sir HERBERT MAXWELL in *Memoirs of the Months* 285. The foregoing taken from a Lecture on the Mistletoe given by Sir Daniel Morris at Bournemouth in 1917.

2228 (2). EUPHORBIA VIRGATA Waldst. and Kit. Pl. Rar. Hung. ii., 176, t. 162. Glabra, radice verticali pluricipiti, caulibus erectis, induratis, virgatis, tenuiter striatis, densiuscule foliosis, superne valde ramulosis; ramulis radiisque tenuibus, iterato-bifidis, inflorescentiam anguste thyrsoideam formantibus; foliis rigidis, strictis, integris, lineari-lanceolatis, basi vix attenuatis, apice attenuatis acutis, umbellaribus brevibus ovatis; floralibus ovatis, mucronulatis, transverse latioribus; involucri campanulati, lobis ovatis, denticulatis, ciliolatis; glandulis semilunatis cornubis, latis apice subincrassatis; capsula breviter ovata, profunda trisulcata, clavato-punctata; semine ovato, caruncula, orbiculari, postice breviter rostrata. Differs from *E. Esula*—radice simplici, descendente, foliis lanceolatis-linearibus, sessilibus, erectis, superioribus lateoribus, involucri foliolis latitudine superantibus, ovatis; floribus pedunculatis; petalis viridibus; capsula punctis elevatis scabris. Distribution—West Germany, Bohemia, Moravia, Austria, Hungary. Transylvania, Croatia, Macedonia, Serbia, Roumania, S. Russia, &c. Wyck, W. Sussex, as *E. Esula*, in *Rep. B.E.C.* 127, 1917; also at Hassocks, E. Sussex, Roberts. When I saw this growing in the gravel pits at Wyck in 1917 I felt it could not be kept to *Esula*. Dr Thellung says it is *virgata*, and doubtless other plants passed in Britain as *Esula* will have to be transferred to it.

2228 (2). E. virgata Waldst. & Kit. Pl. Rar. Hung. ii., 176, t. 162, forma esulifolia Thell. in Ber. Schweiz Bot. Ges. xxiv-v., 215, 1916. Alien, Europe. Calder Bank, York, October 1917. Det. A. Thellung, April 1918. This plant has been recorded under several names and the true identification is very welcome.

2235. E. Peplus L. From the *Barbados Agricultural News* it appears that in Germany experiments were made on this species as a rubber-producing plant. It is claimed that from 2½ acres 42 kilos of rubber were produced as well as 120 kilos of fatty substances. From the difficulty experienced in drying *Sonchus asper* and *S. oleraceus* it is probable that they contain a large percentage of rubber substance.

Gen. 562 (2). Serapias L.

2331 (10). S. neglecta De Not. Prosp. Fl. Ligust. 55. Alien, Italy, Corsica. In a cornfield, Binstead, Isle of Wight, June 2. 1918, noticed for several years, Mrs WEDGWOOD. Unfortunately the roots were removed by the tenant to a garden.

2335. OPHRYS APIFERA Huds., var. MUTELIAE Mutel in Ann. Sc. Nat. iii., 243, 1835. Labelli lobis lateralibus valde cornutis. Reichb. *Ic. Fl. Germ.* xiii., 971, t. 461. In *Trollii* the labellum is "acute triangulo, elongato, lobis lateralibus plus minusve obsoletis." Wantage, Berks, 1912, Mrs LINDSAY. E. G. BAKER, in *lit.* Richter (*Pl. Europ.* 261) only cites it from France. The figure of the flower does not appear to me to represent the Berkshire specimen, which is very imperfect.

2389 (2). HEMEROCALLIS FULVA L. Sp. Pl. 462, 1763. Alien, Europe. By the Arun above Arundel, W. Sussex. Notice was first given me of the occurrence of this showy plant by the Arun in Sussex by Mr P. E. Coombe in 1906 who had accidentally found a clump of it among willows and reeds some years before. Unfortunately it was not to be seen when I went in quest of it that year. In July this year however Prebendary Burdon and myself gathered it in the original station where a local resident had known it for thirty years.

2422. COLCHICUM AUTUMNALE L., var. VERNUM Schrank Baier. Fl. i., 631, 1789. *C. vernale* Hoffm. Fl. Germ. i., 174, 1791. Race *C. vernale* Rouy Fl. Fr. xii., 456. This differs from the type in flowering in the spring. The perianth divisions are narrower and a few leaves are usually present. A specimen is figured in Syme *Eng. Bot.* t. 1545 from Devizes, Wilts. (reprinted from *Eng. Bot.* t. 1432, March 1, 1808). Miss Butler sent it in April last from Birdlip, W. Gloster, and it occurred at Spilsbury, Oxford in 1914. It is rather a lusus than a race or variety, G. C. DRUCE.

Gen. 606 (2). DRACUNCULUS (Tourn.) Mill. Gard. Dict. Abr. 1754. Schott Melet. i., 17, 1832.

2468 (10). D. VULGARIS Schott. *l.c.* ARUM DRACUNCULUS L. Alien, Europe mer. Under brambles in a hedge, Penwartha Coombe, Cornwall, W. E. BUNNY, ex F. RILSTONE. ? A garden outcast.

2498. POTAMOGETON LUCENS L., var. LANCIFOLIUS Mert. & Koch

Deutsch. Fl. In the river close to Pyrford Mill, Surrey (!), July 1918, Lady Davy.

2502. P. perfoliatus L., var. oblongifolius Mert. & Koch. Llyn Coron, Anglesey, July 1918, G. C. Druce. Agreeing fairly well with a specimen from Mertens & Koch in *Herb. De Candolle*, teste A. Bennett; Selkirk, Miss I. M. Hayward.

2509. P. rutilus Wolfgang in Roem. & Schultes Syst. Veg. Mant. iii., 362, 1827. *P. caespitosus* Nolte in Reichb. Ic. Fl. Germ. et Helv. vii., 21, 1845, in syn. Not *rutilus* in Journ. Bot. 65, t. 407, 1900, which is a form of *P. pusillus*. Exsicc.: Tiselius Potam. Suec. iii., n. 105, 1897. Fig.: British Pondweeds 82, t. 54 [Swedish specimen]. Reichb. Ic. Fl. Germ. et Helv. vii., t. 23, f. 40. Stem subcompressed, lower part branched, upper simple, slender. Leaves all similar, narrow-linear, lower crowded, 1-3 in., 3-ribbed, without secondary ribs, semirigid, gradually acuminated at the apex, often tinged with red at base. Stipules long, 1 in., subpersistent, acuminate. Peduncles 1½-2 in. long, slightly thickened upwards. Spikes 3 lines long, few-flowered. Sepals lance-oblong. Drupelet ½-1 line long, nearly straight on the ventral margin, the beak forming a continuation, semi-convex on the dorsal margin. Plant elongated with long internodes on the upper part and sometimes with fascicles of leaves in the axils. Anglesey, Orkney, Arthur Bennett in *British Pondweeds*. Since only Anglesey is given with certainty for this Pondweed in Britain, the previous records of *rutilus* (*Journ. Bot.* 65, 1900) being only forms of *pusillus*, it was thought very desirable to localise the plant, especially as in *British Pondweeds* the plant is figured from a Swedish specimen. Fortunately the original specimen is contained in the Herbarium of our member, Mr J. Griffith, the author of the *Flora of Anglesey and Carnarvon*, and he told me that he gathered it in Llyn Coron in 1892. Last year I visited Llyn Coron but was unfortunate as the continued stormy weather prevented any dredging. This year we happened on one calm day and after some close search Mrs Wedgwood and I were rewarded by obtaining a few specimens growing among a dense growth of *Chara* in about 5 feet depth of water. It was mostly barren. Storms prevented us obtaining more on a second visit. It is a singularly graceful plant with bright green leaves when young. G. C. DRUCE. One may add that the apparently endemic *P. Griffithii* is still present in its classic locality in Carnarvonshire, but even in July it was past its best. Only *P. polygonifolius* was observed growing with it in the mountain lake, but there is no boat by which the centre of the lake can be reached.

2527 (3). CYPERUS DECLINATUS Moench, var. LIMBATUS (C. B. Clarke), comb. nov. G. C. Druce. Alien, Juan Fernandes, Chile. Bradford, York, J. CRYER. Det., as *C. vegetus*, var. *limbatus* Clarke by W. B. TURRILL.

2564. CAREX INFLATA Huds., var. ANGUSTIFOLIA Druce in Ann. Scot. Nat. Hist. 109, 1908. Alltnahara, W. Sutherland; Loch Watton, Caithness.

2632 (2). PANICUM FRUMENTACEUM (Link), comb. nov., not of Salisbury or Roxburgh. Alien, Europe. Bradford, York, J. CRYER. Det., as *Echinochloa*, by Dr STAPF.

2637 (2). PANICUM LAEVIFOLIUM Hackel, var. AMBOENSE Hackel ined. Differt a typo pedunculis lateralibus brevioribus minus patentibus, apice minus distincte clavato-incrassatis. Alien, Africa austr. Adventive in France, Germany, and Switzerland. Bradford, York, 1917, J. CRYER and E. C. HORRELL; Hertford, G. C. DRUCE.

2641 (2). SETARIA AMBIGUA Gussone Fl. Sicil. Syn. i., 114. Alien, Sicily, Hungary. Bristol, 1918, Mrs SANDWITH.

2663. ALOPECURUS ALPINUS Sm., var. ROBUSTUS mihi. Differs from the type in its more robust growth, longer leaves (12 cm. by 6 mm. broad) which are more strongly ribbed, the ribs more asperous with small cartilaginous bristles, sheaths less inflated, panicle relatively short, 2 cm. long by 12 mm. broad, the whole plant intensely glaucous, and at a distance suggesting *Elymus arenarius*. Found by Miss I. M. HAYWARD in a sewage tank at Galashiels, Selkirk, flowering in September 1916, and seen by myself in 1917. I am inclined to think this comes from the Falkland Isles or Magellan area.

2669 (7). STIPA FORMICARUM Delile Ind. Sem. Hort. Monsp.

vii., 1849, var. SPICA-VENTI (Godr.) Thell. Fl. Adv. Montp. 91, 1912. Alien. Bradford, York, J. CRYER. Det. A. THELLUNG. Also found adventive in Germany.

Gen. 652 (3). SPOROBOLUS R. Br. Prod. 169, 1812.

2682 (10). S. INDICUS R. Br., *l.c.* Alien, Australia. Bradford, York, 1918, J. CRYER. Det. W. B. TURRILL.

2687. AGROSTIS CANINA L., var. STOLONIFERA Blytt Norge Flora 81, 1861. In marshy ground near Wellington College, Berks, G. C. DRUCE. Rootstock longly creeping, with numerous tufts of fine capillary leaves at intervals on the stolons.

Var. PALLIDA Reichb. Ic. Fl. Germ. t. lxxiv., f. 129, p. 8, 1850. Differs only in its straw-coloured spikelets, therefore only a sub-var. *pallida*, G. C. DRUCE.

2713. HOLCUS MOLLIS L., var. BIARISTATUS Parnell Scot. Grasses 51, 1842. Killin, M. Perth, 1917, J. FRASER, vide sp. Parnell was at first inclined to think it a distinct species, but he described it afterwards as " a variety having fewer and larger spikelets, longer ligule, florets nearly of equal size, as long as the small glume of the calyx, acute at the summits, both furnished with a long dorsal awn which is rough throughout. Frequent in damp shady woods, and occasionally in open boggy situations."

2725. ARRHENATHERUM TUBEROSUM (Gilib.) Druce, sub-var. BIARISTATUM Fraser. Flowers with two awns, analogous to the var. *biaristatum* of *A. elatius*. Craignavie, Killin, M. Perth; Levenhall, Edinburgh, August 1918, J. FRASER.

2729 (4). CHLORIS VIRGATA Swartz Fl. Ind. Occ. I., 203. Alien, tropical America. Bradford, 1918, J. CRYER. Det. at Kew.

Gen. 673 (3). DIPLACHNE Beauv. Agrost. 80. 1812.

2732 (10). D. REPTATRIX (L. Sp. Pl. 103, 1762) as *Festuca* comb. nov. Druce. Alien, Orient. Bradford, York, J. CRYER, 1918. Det., as *D. fusca*, at Kew.

2733. PHRAGMITES VULGARIS Druce, forma RAMOSA (Gross in Kneucker Gram. Exsicc. 1914-15, n. 878 under *Arundo*). Culmi

erecti in nodis nonnullis mediis et superioribus, singulos ternosve ramos steriles suberectos 1-12 dm. longos ferunt. Nostra forma valde differt a *Ph. stolonifera* G. F. Meyer culmis ramisque non repentibus, nodis nunquam radicantibus.

2733. P. VULGARIS Druce, nov. var. vel forma HIRSUTA A. R. Horwood. Vagina hirsuta et foliis hirsutis. Little Broad, Norfolk, A. R. HORWOOD.

2744. KOELERIA ADVENA Stapf in Trans. Bot. Soc. Edin. 303. 1917-18. See paper by J. Fraser. New to Science. Discovered by our member, Mr J. Fraser, who sent me a specimen in 1916. It was unknown to me and also to Dr Thellung who thought it was an African species. It was found near Edinburgh, growing among surroundings and under conditions which indicated that its seeds must have come into this country with esparto grass.—Affinis *K. scabriusculae* Hack., sed valvis obtusiusculis vel minute emarginatis (haud acuminatis biaristulatis) muticis vel sub apice mucronulatis valvam aequantibus (eâ haud conspicue longioribus) distincta. Gramen gracile annuum. Culmi fasciculati, erecti vel geniculato-ascendentes, graciles, 10-13 cm. alti, glabri vel internodiis inferioribus apicem versus minute puberulis 2-5-nodi nodo summo longe infra medium sito. Foliorum vaginae arctae, tenues tenuiter pubescentes vel summa subglabra, praeter infimas internodio breviores; ligulae breves, membranaceae, rotundatae; laminae patentes anguste lineares, superne attenuatae, acutae, 8-30 mm. longae, 1-15 mm. latae, molles, pubescentes, ad margines scabriusculae vel basin versus etiam ciliatae. Panicula angusta, contracta ambitu sublinearis, inferne interrupta vel lobata, 3-5 cm. longa, 6-10 mm. diam., ramis ramulis pedicellis glabris, laevibus vel superne scabriusculis; pedicelli perbreves, raro 2 mm. longi. Spiculae, ambitu obovatae, 4-5 cm. longae, superne 2-3 mm. latae, 3-4 florae, glabrae, nitidulae. Glumae aequilongae spiculam subaequantes a latere visam oblongae, obtusiusculae, 3-nerves, plus minusve pallide purpureo-suffusae. Rhachilla internodiis minute pilosulis circiter 1 mm. longis. Anthoecia 3 mm. longa, sursum perpaullum minora, summo ad squamulas minutas reducto. Valva a latere visa anguste oblonga, obtusiuscula vel minute emarginata, saepe sub apice tenuiter mucronulata, in dorso

tenuissime scaberula, tenuiter 3-nervis. Valvula valvam aequans, 2-dentata, hyalina albo-nitens. Antherae 2 mm. longae.

2744 (5). K. SCABRIUSCULA Hackel in Oestr. Bot. Zeitschr. 123, 1877. Among esparto aliens at Levenhall, Edinburgh, 1918, J. FRASER. Det. W. B. TURRILL.

2748 (7). ERAGROSTIS CURVULA Nees Fl. Afr. aust. 397. Alien, S. Africa. Bradford, York, 1918, J. CRYER. Det. at Kew.

2769. POA ANNUA L., var. EXILIS Tomm. ap. Freyn in Z.-B.G. 469, 1877. *P. remotiflora* Murbeck in Act. Univ. Lund. xxxvi., Afd. 11, 2, no. 1, 22 (non Ruprecht which is *P. Laestadii*). *P. annua*, var. *remotiflora* Hackel in Batt. & Trab. Fl. d'Alg. ii., 206. *P. exilis* Murb. in A. & G. Syn. 390 as a sub-species. This small grass I found in June 1906 at Petit Bo, Guernsey, and referred it to " a small form in fruit " in *Journ. Bot.* 427, 1907. Subsequently Prof. Hackel named it *P. annua*, forma *crinita*. See *Rep. B.E.C.* 42, 1914. As I could not see in this grass any specific differences from *P. annua* I put it under that species in Hayward's *Botanist's Pocket Book* 274, 1914. M. Rouy *Fl. Fr.* xiv., 268 places it as a race of *P. annua*. Mr C. E. Salmon published its occurrence in Jersey in 1914. See also *Rep. B.E.C.* 257, 1917.

2776. GLYCERIA MARITIMA × BORRERI = × G. BURDONI, hybr. nov. [Ref. No. V 755]. With both the assumed parents at Pagham, W. Sussex and, when fresh and unpressed, looking a good intermediate. It has mostly flat, glaucous leaves, the spikelets broader and less enrolled than in *maritima*, the panicle branches arranged on the axis so as to simulate *Borreri*, and it is a more slender and a taller plant. The glumes and spikelets of the upper branches approach the Kentish *Foucaudii* of which it has (usually) the ciliate pales which seem to occur in various *maritima* forms. See *Rep B.E.C.* 258, 1917. G. C. DRUCE.

2776. G. MARITIMA × DISTANS, hybr. nov. Pagham, W. Sussex. [Ref. No. V 724]. See *Rep. B.E.C.* 259, 1917. This has the stout habit of *hibernica*, but the leaves are mostly flat, the panicle branches more slender, longer, the lowest 3-4 cm., naked for1-1.2 cm. from the base, the branches straddling or spreading nearly at right angles. This is near to var. *deflexa*. G. C. DRUCE.

2776. G. MARITIMA Wahl., sub-var. AMETHYSTINA (Meyer Chlor. Hann. 629. [Ref. No. V 747]. Pagham, July 1917. [Ref. No. V 731]. Chichester Harbour, W. Sussex, July 1917, the latter forming a passage to *hibernica* in its larger size and more caespitose habit. G. C. DRUCE.

2776. G. MARITIMA Wahl., sub-var. SUBCAESPITOSA. [Ref. No. V 760]. An intermediate between *maritima* and var. *hibernica*, having a loosely caespitose habit, but usually a smaller plant than *hibernica*. Gravelly soil, Chichester Harbour, W. Sussex., July 1917. Ref. No. V 782 from Pagham, W. Sussex, scarcely differs but is slightly nearer *hibernica*. G. C. DRUCE.

2776. G. MARITIMA Wahl., var. DEFLEXA (Syme E. B. xi., 103 under *Sclerochloa*). [Ref. No. V 741 as f. *distantiformis*]. This suggests a possible hybrid with *distans* which however was not growing near, nor could positive evidence of it be detected in the plants. This also occurred as the sub-var. *amethystina*. Chichester Harbour, W. Sussex, July 1917, G. C. DRUCE.

2776. G. MARITIMA Wahl., var. HIBERNICA (Druce). See *Rep. B.E.C.* 258, 1917. [Ref. No. V 740]. Chichester Harbour, W. Sussex, July 1917. This differs from Hackel's type *Foucaudii* from Kent in the enrolled leaves, caespitose growth, absence of runners, &c. Also [Ref. No. V 735] from Pagham, W. Sussex, July 1917, with smaller spikelets having some resemblance to *peisonis* from Corfu. G. C. DRUCE.

2782. FESTUCA ELATIOR L., var. INTERMEDIA Haekel. Ardtalnaig, M. Perth, G. C. DRUCE in *Ann. Scot. Nat. Hist.* 235, 1900.

2782. F. ELATIOR × GIGANTEA = × F. SCHLICKUMI Grantzow Fl. d. Uckerm. 340, 1880. Plant tall, about 8 dm.; leaves flat, pale green above and below, about 5 mm. broad, with rather prominent ribs and scarious margins, gradually tapering for two-thirds of their length to the apex; ligule broader than long; panicle about 25 cm. long, somewhat secund, with the branches about 7 mm. long, having florets throughout, that is not naked at base; outer glume and pales with a broad hyaline margin, minutely ciliate; awn about 3 mm. long; spikelets pale green, turning to a pinkish-brown, nearly sterile. This differs from *gigantea* in the much more sessile panicle-branches and spikelets, the flowers of which are much less definitely aggregated into a spikelet, in the leaves being firmer and narrower, and in the sheaths being less scabrid. From *elatior* it is distinguished by the broader leaves, the longer awned pale, and the presence of the conspicuous dark band on the culm above the nodes. Nyman (*Consp.* 824) records this hybrid from Prussia and Bohemia. It was sent to me for determination in 1918 by Mr F. ROBINSON who found two or three specimens growing in a fence at Watton, W. Norfolk. It is a new hybrid to the British Flora.

2787. F. OVINA L. var. ALPINA Gren. & Godr. Fl. Fr. iii., 571, 1856. Abundant on the limestone of Inchnadamph, W. Sutherland. G. C. DRUCE in *Ann. Scot. Nat. Hist.* 109, 1908.

2823. LOLIUM ARISTATUM Lag. Gen. & Sp. 5, 1816, var. vel lusus RAMOSUM. *L. Boucheanum* Kunth Gram. ii. t. 220, 1829; Enum i., 436, 1833. *L. italicum* Koch Syn. 956, 1844 and A. Braun in Flora xvii., 259, 1834, var. or lusus *ramosum* (Gussone Fl. Sic. i., 59, 1842 as a var. of *L. temulentum*). *L. perenne*, var. *aristatum* Coss. & Germ. Fl. Par. 656, 1845. This monstrous condition has a large, compound, open panicle. It was brought me from Goring, Oxon, by Mr T. GAMBIER PARRY in 1918. Bristol, 1918, Mrs SANDWITH; Slough, Bucks, 1899, G. C. DRUCE.

2885. ASPLENIUM ADIANTUM-NIGRUM L., var. CUNEIFOLIUM (Viv.), comb. nov. *A. cuneifolium* Viv. Fl. It. Fragm. i., 16, 1806. *A. Forsteri* Sadl. Diss. Inaug. 29, 1820. *A. Serpentini* Tausch in Flora xxii., 77, 1839. Sub-sp. *cuneifolius* Christensen Ind. Fil. 99. Sub-sp. *Serpentini* Milde Fil. 86. *A. Adiantum-nigrum*, var. *obtusum* Moore in Seeman's Journ. Bot. 128, 1864. *A. obtusum* Presl, not Kitaibel. Fig.: Milde Nova Acta xxvi., p. 11, t. 43, 44. Seemann's Journ. Bot. 130, 1864. Croatia, Dalmatia, Serbia, Hungary, Bohemia, Saxony, Italy, Corsica, S. Africa, Abyssinia and Scotland. First discovered by the Rev. Andrew Christie in 1862 on the serpentine range dividing the counties of Banff and Aberdeenshire and recorded by T. Moore in Seemann's Journ. Bot. 184, 1863. This interesting fern was observed by myself and Mrs Wedgwood last August on a serpentine hill to the east of the Buck of Cabrach growing in some quantity with *A. Adiantum-nigrum* and transitional forms. In outline the fern approaches *Onopteris* but the colour is dull, not lucid green, and the segments are not so narrow, nor the frond so elongated and gracile. Compared with *Adiantum-nigrum* the frond has usually a relatively longer stipe, the base of the segments are normally recurvate, the lamina is more divided with the ultimate segments less approximate and more or less bent away from the central rachis. Not only were transitional forms found but examples with singularly undivided fronds, as well as others which could not be separated from *Adiantum-nigrum*. Although Milde threats it as a sub-species, a grade retained by Christensen, he says " formas in *A. Adiantum-nigrum* transientes saepe cum *A. serpentini* in eodum rhizomate inveni," which induces me (as well as from my own observations in Aberdeenshire) to give it only varietal rank. It may be well to quote an analysis by Ebner of the serpentine soil on which it grows (*Verh. Zool.-Bot. Ges. Wien* 377, 1861)—Magnesia 31.22, Lime 18.77, Potash 30.05, Chloride of Sodium 8.89 parts in 100. The large percentage of potash came as a surprise to me, and suggests the mineral as a source of supply for that valuable alkali.

2896. DRYOPTERIS FILIX-MAS Schott. A beautiful foliose form in which the frond is compoundly divided into very broad and deeply cut pinnae was found by Mrs WEDGWOOD in Ludlow Great Wood, Salop, but Dr Stansfield thinks that as it is only fertile in the upper part of the frond it would probably revert if grown in a more open situation.

2905. CYSTOPTERIS REGIA Presl, var. DICKIEANA (Sim) Druce. *C. Dickieana* Sim Gard. Journ. 308, 1848. *C. fragilis*, var. *Dickieana* Moore Hand. Brit. Ferns 81 : Bot. Gaz. i., 310, 1849. Moore & Lindley Nat. Printed Ferns of Gt. Britain and Ireland, t. 46, fig. 5, 6. *C. dentata*, forma *Dickieana* Bab. Man. 412, 1851. Sowerby Ferns of Great Britain 39, t. 22. *C. alpina*, var. *Dickieana* Milde Fil. Europ. 151. The sori in this beautiful variety are close to the margin and the spores are slightly verrucate or tuberculate, not echinatetuberculate. It was found by (teste Moore *Bot. Gaz.* 310, 1849) Dr Dickie, Professor of Botany at Aberdeen, near that city, but in Kincardineshire, in 1846, on dripping rocks, and as *C. fragilis* he recorded it in the *Flora*. It is also stated by Moore to have been found by Dr Balfour near Dunkeld, but Buchanan White in the *Flora of Perthshire* makes no allusion to it. Lowe also mentions it from the Great Isle of Aran, Galway, but it is not included in the *Cybele Hibernica*. It is stated to have been destroyed in its original station near Aberdeen, where Mrs Wedgwood and I failed to find it. Subsequently it was our good fortune to meet with it in another place in August last, and it afforded a beautiful sight. The delicate green fronds, with their broad, deflexed, continuous pinnae far remove it from any form of *fragilis*. Newman (*Brit. Ferns* 93) says " It is a perfectly healthy plant, not monstrous or distorted and it produces its like from seed for many generations, becoming a perfect weed, whereas *fragilis*, under similar treatment, rarely reproduces itself. Cultivated in the same soil and in the same pot with *fragilis*, the latter becomes larger and more vigorous, *Dickieana* smaller and less vigorous, and the more care the cultivator bestows on these two plants, the more he will find they recede from each other whereas all differences between the so-called *fragilis*, *angustata* and *dentata* are speedily lost in cultivation." Syme gives the credit of its discovery to Professor Knight of Aberdeen and says the spores are precisely similar to those of *C. alpina*, a statement which led me to put it as a variety of that species in the *British Plant List*. Syme considered *alpina* to be only a sub-species after many years experience of its culture. Dr Stansfield believes it to be a distinct species, but speaks with some reserve considering the extreme localisation of the plant. Milde (*Fil. Europ.* 151) also puts *Dickieana* to *alpina*, while Nyman, without giving it any grade, places it under *C. regia* Presl and only cites Aberdeen (*sic*) as its habitat.

NOTES ON PUBLICATIONS, NEW BOOKS, ETC., 1917-18.

(Owing to exigencies of space and war restrictions only the more important are given in this Report.)

ADAMSON, R.H. On the Relationship of some Associations of the Southern Pennines in Journal of Ecology, 97, 1918.

ALLEN, C. E., and GILBERT, E. M. TEXT-BOOK OF BOTANY. Illustrated. D. C. Heath & Co., Boston, 1918; 1 dollar 48 cents.

ANCIBURE, M. M., and PRESTAT. Catalogue des Plantes de la Région Bayonnaise, pp. 1-85, 1918. Société Bayonnaise d'Etudes Regionales. Bayonne.

ANNALS OF BOTANY. Subscription £2 12/- annually. H. Milford, Oxford University Press, Amen Corner, E.C.

ARNELL, H. WILK. Vartloran vid Harnösand in Bot. Notiser, Haft 4, p. 169, 1918.

ASHE, W. W. Notes on Southern Woody Plants in Torreya xviii., pp. 71-74, 1918.

BAKER, J. GILBERT, our Hon. Member, gives a very readable paper in the Gardeners' Chronicle for December 23, 1917, on "The Botany and Physical Geography of the Holy Land." He says the region of Syria and Palestine forms one of the most wonderful in the world. In a tract about the size of England or the State of New York are to be found 3500 plants not going below the Ferns and he thinks that when the hills on the east side of the Jordan are thoroughly investigated the number of 4000 will be reached. Mr Baker gives the total number of British species as 1500, which is on Benthamian lines, and in the whole of Europe as 10,000. But this number would be nearly doubled according to more modern segregation. I may add that in the recently published *Flora of the Vicinity of New York* which comprises Connecticut and parts of Pennsylvania Mr Norman Taylor enumerates 2038 native and 613 adventitious plants, so that Mr Baker's statements are borne out. Nor need we wonder at this number considering that the area is a seat of ancient civilisation and intensive culture and has a most varied soil and climate as well as a great altitudinal range from the coast level to over 10,000 feet. Mount Hermon, on which wild wheat has been found, rises to 6400 feet. The Bracken grows on Lebanon at 6000 feet and at 8000-9000 the beautiful blue-flowered *Vicia canescens* forms large tufts.

Balfour, Prof. I. Bayley. New Species of *Primula* in the Proceedings of the Botanical Society of Edinburgh, xxviii., p. 231. The Genus *Nomocharis* and New Species of *Rhododendron* in Notes from the Royal Botanic Garden Edinburgh, Nos. xlvii. and xlviii., April 1918.

Bar, P. Die Vegetation des Val Onsernone (Kanton Ticino) pp. 80. Ruscher & Co., Zürich, 1918; 3 francs.

Bastin, S. Leonard. British Ferns and How to Know Them Methuen, London, 1917; 1/6 nett.

Batten, Lily. Ecology of *Epilobium hirsutum* in Journal of Ecology, vol. vi., No. 3, 1918.

Bayford, E. G. A Floral Film of 1831. (Flora of the Brampton and Wath Area). The Naturalist, pp. 89-92, March 1918.

Beccari, O. Origin and Dispersal of *Cocos nucifera*. Philipp. Journal of Science, xii., 27, 1917. Asiatic or Polynesian, rather than American, origin is suggested.

Beck von Mannaghetta und Lerchenau, G. Flore Bosne, Hercegovine, &c. Glas. Zem. Muz. Bosn. & Herc., xxviii., p. 41, 1916.

Bennett, Arthur. *Ceratophyllum demersum* in Orkney and *Ulex nanus* in Caithness in the Transactions of the Botanical Society of Edinburgh, xxvii., 134, 1917.

Bernhard, Prof. Noel. L'Evolution des Plantes. 8vo., pp. xxxii., 314, tt. 29. Felix Alcan, Paris; 4 francs 55 cents.

Blake, S. F. On the Flora of New Brunswick in Rhodora, xx.,

p. 101, 1918. A Revision of the Genus *Viguiera* in Contributions to the Gray Herbarium, Harvard University, new series, liv., 1918.

Bonaparte, Prince Roland. Notes Pteridologiques. Paris, Imprimé pour l'auteur. Fasc. i. and ii., 1915; iii., 1916; iv. and v., 1917. For some years past His Highness has been specialising on the Ferns and their allies and these valuable publications contain some of the results of his investigations. They contain a large number of new species. The nomenclature is based on Christensen's *Index* and its supplement.

Bornmuller, J. Zur Flora des Nord Syrien in Notizbl. Berl. Dahlem. vii., 1-44, 1917.

Botanical Abstracts. A monthly serial, furnishing abstracts and citations of publications in the international field of Botany in its broadest sense. Williams & Wilkins Company, Publishers, Baltimore, U.S.A.; annual subscription 6 dollars 50 cents.

Botanical Magazine. China still continues to pour out a never-failing supply of showy plants. The plate t. 8782 figures *Mesembryanthenum edule* L., which few people would recognise as the distorted scrap displayed in the *Cambridge Flora* for that species.

Bower, Prof. F. O., Sc.D., F.R.S. Studies in the Phylogeny of the Filicales. VII. Pteroideae. Annals of Botany, 1918.

Brenchley, Winifred E. Organic Plant Poisons. II. Phenols. Annals of Botany, xxxii., p. 259. 1918. Survival of Weed Seeds. Gardeners' Chronicle, November 16, 1918.

Britton, Nathaniel Lord. Flora of Bermuda. 8vo., pp. xi., 585, figs. 519. Scribner's Sons, New York, 1918; 4 dollars 50 cents.

Brunker, J. P. A New Station for *Lathraea Squamaria* in Co. Dublin in Irish Naturalist xxvii., No. 7. p. 110, 1918.

Bullock-Webster, Rev. Canon G. R. The Characeae of the Rosses in Irish Naturalist, xxvii., No. 1, p. 7, 1918.

Burnham, S. H. Flora of the Indian Ladder and Vicinity of the Helderberg Mountains in Torreya, xviii., pp. 101, 127, 1918.

Claye, Rev. Canon A. H., D.D. Cranberry and Bilberry in Lincolnshire in Selborne Magazine 24, 1918. *Vaccinium Myrtillus* occurred in Broughton parish and the Cranberry was found in Appleby parish. Both had long been thought to be extinct. The latter species had not been seen since 1863, although at one time the berries were of economic value from their abundance.

Cockerell, T. D. A. Notes on the Flora of Boulder County Colorado in Torreya, xviii., p. 177, 1918.

Coker, Dorothy. Revision of N. American Eucalypti in Bull. Torr. Bot. Club, xlv., p. 433, 1918.

Colgan, Nathaniel, M.R.I.A. Lusitania and Kerry—a Botanical Parallel, includes *Lepidium perfoliatum*, in Irish Naturalist, xxvii., No. 2, p. 20, 1918. Notes on Alien Plants of Co. Dublin in Irish Naturalist, xxvii., No. 6, p. 86, 1918.

Correvon, H. et P. R. La Flore Alpine, ed. 2, pp. 341. Genève 1917.

Coulter, J. M., and M. C. Plant Genetics. 8vo., pp. ix., 214, 40 diagrams. Chicago University Press, July 1918; 1 dollar 50 cents nett.

Craib, W. Grant, M.A. Primulae Novitates Nonnullae, and Gesneracearum Novitates Nonnullae in Notes from the Royal Botanic Garden Edinburgh, Nos. xlix. and l., November 1918.

Dallman, A. A., F.C.S., and Lee, W. A., M.A. An old Cheshire Herbarium in Lancashire and Cheshire Nat., 192, 1917. This was made by Miss Barbara Townshend of Wincham Hall, Cheshire, who was born in 1781 and died in 1816. The herbarium includes 104 Cheshire plants.

Dickson, James. List of Naseby Plants, Northants, 1792, G. C. Druce in Journ. Northants Nat. Hist. Society 116, 1918.

Domin, K. Eine Decade neuer Adventivpflanzen aus Böhmen in Mag. Bot. Lap. 112, 1917.

Druce, G. Claridge. Exhibition of New British Plants in Proceedings of the Linnean Society p. 58, June 1918. These have been described in the *Reports of the Botanical Exchange Club.*

Ellis, Dr D. Herbs and Poisonous Plants, pp. xi., 179. Blackie & Son, London; 2/6 nett.

Emerson, A. I., and Weed, C. M. Our Trees: How to Know Them, ed. 5, pp. xxi., 295, 149 illustrations. J. B. Lippincott Co., Philadelphia and London, 1918; 3 dollars 50 cents.

Ewart, Albert, D.Sc., and Davies, Olive B., M.Sc. The Flora of the Northern Territory (of Australia), pp. 387, 1917. M'Carron, Bird & Co., Melbourne. Mr J. H. Maiden contributes separate Synopses of the species of *Acacia* and *Eucalyptus*, Mr Edwin describes the Myrtaceae, and Mr A. Hamilton the Cyperaceae. A map is appended showing the route of the Barclay Expedition and characteristic vegetation. About 36 new species are described and there are 27 plates. It is published by the authority of the Minister for Home and Territories and we are indebted to the Minister of the Commonwealth for a copy.

Falconer, W. Botanical Notes, mainly from the Colne Valley in The Naturalist, p. 379, December 1918.

Farrow, E. P. Ecology of the Vegetation of Breckland in Journal of Ecology vol. v., 183, 1917, vol. vi., 114. 1918.

Fernald, M. L. American variations of *Epilobium* in Rhodora, vol. xx., p. 1. 1918. North American *Littorella* in Rhodora, vol. xx., p. 61, 1918.

Fischer, C. G. S. The Flora of the Anamalais (Notes). August 1918, in The Botanical Bulletin. Presidency College, Madras.

Foster, Nevin H. *Draba muralis* in Co. Down in Irish Naturalist, xxvii., No. 7, p. 110. 1918. *Spiranthes Romanzoffiana* in Co. Armagh in Irish Naturalist, xxvii., No. 10, p. 163, 1918.

GAMBLE, J. S., C.I.E. FLORA OF THE PRESIDENCY OF MADRAS. 8vo., pp. 201-390, pt. ii. Adlard & Son, London, 1918; 8/-.

GARDENERS' CHRONICLE. This ably edited periodical, amid much of interest, has an account of Kew Gardens by "W. W.," an able review by Mr H. J. Elwes of Hooker's Life and Letters and an article on Lovage by Major G. Hurlstone Hardy. January 26. Plant Collecting in China, George Forrest. The description of the myriad species of Rhododendrons and Primulas makes one's mouth water. Of the latter a new species with large trumpet flowers of purple-blue and of the former, *R. glischrum*, with big trusses of large campanulate blooms of plum-rose with crimson markings and a deep crimson blotch at base, seem singularly attractive. March 2. Collecting Tree Seed. As might be expected the number of seeds in a pound varies immensely, and a useful table is given showing average numbers varying from 36 in the Horse Chestnut and Walnut to Oak 100, Sycamore 1624, Hornbeam about 10,000, Beech 2700, Ash 6800, Cedar of Lebanon 10,800, *Pinus Pinaster* 12,000, Silver Fir 15,000, Larch 65,000 and Scots Fir 75,000. November 16. Survival of Weed Seeds, Winifred E. Brenchley. An article of extraordinary interest in which the writer says it is an undoubted fact that when grass land or old waste land is broken up large crops of such plants as Charlock or Poppy are wont to appear. . . . In many cases a previous history of cultivation can be proved, and then it is quite feasible that the crops of weeds have arisen from long-buried seeds. Some experiments recently carried out at Rothamsted have proved conclusively that seeds of some of the common weeds of cultivated land can survive even when they are buried in soil that has been laid down in grass for periods of as long as 59 years. Orache, Knot-grass, Field Speedwell, Charlock and Black Bindweed are among the weeds that were obtained from an old ploughed field that was turned into a meadow in 1859. In another case land was grassed over in 1885 so that it had not been cultivated for more than thirty years. Nevertheless quite a large number of living arable weeds were present. From a cube of soil 1 foot square by 1 foot deep seventy-four such seeds were obtained, every one of which germinated and produced a healthy seedling. No fewer than fifty-two of these were seeds of Knot-grass but Pimpernel, Sandwort, Orache and Poppy were well represented, and Black Bindweed, Wild Pansy and Field Speedwell occurred in less quantity. There was evidence to show that when the field was under arable the Knot-grass was in abundance. Most of these arable seeds are found at some depth in the soil, mainly from 5 to 12 inches below the surface. While a large number of seeds rot, a certain number retain their vitality and are able to start into growth when favourable conditions arise. It must not be assumed that fifty-nine years represents the limit of time that life can be maintained under such conditions. More evidence of a direct nature is needed, but sufficient data exist to show that the buried seeds may constitute a very real danger to farmers when grass land is broken up or ploughed more deeply than usual.

Gibbs, Miss L. S. A Contribution to the Phyto-Geography and Flora of the Arfak Mountains, &c. (New Guinea). pp. lv., 226. Taylor & Francis, London, 1917; 12/6. In this work, treating of the north-western portion of New Guinea, Miss Gibbs has shown what an important focus of distribution lies in this little-explored area since in it occur types hitherto considered to be of Polynesian or Australian origin. Out of 330 plants collected 100 were new to science, one of them—*Libocedrus arfakensis*—belonging to a new genus to the country.

Graebner, P. Synopsis der Mittel-Europ. Flora. 94 Lief. 625-704, 1918. This will be noticed later on.

Greenman, J. M. Two Exotic Compositae in N. America in Annals of the Missouri Bot. Garden, vol. iv., No. 4, 1917. Monograph of N. & Cent. American Senecio in Annals of the Missouri Bot. Garden, vol. v., p. 37, 1918.

Grove, W. B. The British Species of *Melanconium* in Kew Bulletin, No. 5, p. 161, 1918.

Groves, James, and Bullock-Webster, Canon G. R. Characeae of Ireland in Irish Naturalist, 134, 1917.

Guppy, H. B. Plants, Seeds and Currents in the West Indies and Azores. pp. viii., 531. Williams & Norgate, London, 1917; 25/-.

HAKANSON, J. W. Floristiska bidrag. från södra Lidingö (Floristische Beiträge aus dem Sudtiel von Lidingö, in Svensk Botanisk Tidskrift, Haft 3, No. 12, p. 372, 1918.

HANBURY, F. J., F.L.S. A Sussex Rock-Garden in Journ. Royal Hort. Soc. xlii., 271, 1916. A delightful description illustrated with charming photographic reproductions of one of the most beautiful and most richly furnished rock-gardens in Britain. It may be noted that Mr Hanbury has growing a large number of the rarest British species.

HARSHBERGER, Prof. J. W. A TEXT-BOOK OF MYCOLOGY AND PLANT PATHOLOGY. pp. xiii., 779, tt. 271. J. & A. Churchill, London, 1918; 15/-.

HAYEK, Dr A. von. Uber einige Kritische Pflanzen der Alpenkette. III. (*Senecio aurantiacus.*) Bot. Zeitschrift, xxiii., Jahrg., Nos. 1-4, 1917. Beitrage des Flora des Albanisch-Monten. Grenzebeites in Dansk. Ac Wiss. Wien Math-Nat., xcix., 127, 1917.

HEGI, G. Illustr. Fl. von Mitt.-Europa. Band iv. and Band vi. J. F. Lehmann. München, 1918.

HEMSLEY, W. BOTTING. The Palms of the Seychelles and Mascarenes in Nature, 73, 1918.

HESLOP-HARRISON, J. W. A Survey of the Lower Tees Marshes in Nat. Hist. Soc. Northumberland, Durham and Newcastle-on-Tyne. vol. v., pp. 89, 140, 7 maps, 1917. A fascinating account of the ecology of that important marsh system which will doubtless be profoundly changed in the not distant future.

HIERN, W. P., F.R.S. Presidential address in Trans. Devon Assoc. xlix., pp. 27-59, 1917. This gives (1) A list of the Fossil Plants of the county. (2) The Devon Myxomycetes and Fungi. (3) Lichens. These include the rare *Rachodium rupestre* and the new *Polyblastia mortensis* Watson. (4) Eleven species of Characeae. (5) 490 species of Marine Algae and 149 species of Fresh-water Algae. (6) 122 species of Hepaticae. (7) 345 species of Mosses. Our member, Mr C. P. Hurst, has recently added *Grimmia subsquarrosa* Wils., *Coscinodon cribrosus* Spruce, and *Bryum lacustre* Brid. to the flora. (8) Ferns, 32 species; Equisetaceae, 6; Lycopods, &c., 5, and *Pilularia*. (9) Spermatophytes, 1318 species as against 2030 for the British Isles. (10) The rare plants of the eight Devon county divisions are given as well as the curious absentees. Among the special plants mentioned are *Ranunculus tripartitus*, *Mathiola sinuata*. *Helianthemum polifolium*, *Viola meduanensis*, *Ononis reclinata*, *Rubus saxatilis*, *Danaa cornubiensis*, *Eryngium campestre*, *Erica ciliaris*, *Lobelia urens*, *Cicendia filiformis*, * *Rhinanthus hirsutus*, *Euphrasia minima*, *E. Vigursii*, *Teucrium Scordium*, *Corrigiola littoralis*, *Euphorbia hyberna*, *Empetrum nigrum*, *Acorus Calamus*, *Sagittaria heterophylla*, var. *iscana* (discovered by Mr Hiern), *Potamogeton salignus*, *Lilium pyrenaicum*, *Romulea Columnae*, *Scirpus triqueter*, *S. Holoschoenus*, *Carex montana* and *Melica nutans*. Among other interesting species (not specially mentioned by Mr Hiern) for the county are *Stellaria nemorum*, *Hypericum linariifolium*, *Viola epipsila*, *Geranium striatum*, *Bupleurum aristatum*, *Polygonum maritimum*, *Linaria arenaria* (planted), *Euphorbia Peplis* and *Juncus acutus*—a galaxy of riches of which Devon may well be proud. Mr Hiern then gives an able note on the Carices of which he has prepared a clavis of the Devon species based on the material published in Mr Crawford's book on the *Anatomy of British Carices* dated 1910. By Mr Hiern's kindness we are allowed to have his clavis published here. It must be remembered it refers to Devon species only. It will be noted that *C. Pairaei* recently found by me in the county is not included. The address as a whole is a masterly compilation and is full of valuable information. One would like to see a complete Flora of the county from one so well qualified to produce it. Ninth Report of the Botany Committee (of Devonshire) in Trans. Devon Assoc., xlix., pp. 99-108, 1917. This contains, among other records, a notice of *Cotula anthemoides* L., from Plymouth, a new alien.

HILL, ARTHUR W. The Genus *Caltha* in the Southern Hemisphere in Annals of Botany, xxxii., p. 421, 1918.

HOLLAND, M. Some Cork Aliens in Irish Naturalist, xxvii., No. 4, p. 63, 1918.

Holmberg, Otto R. *Carex diandra* × *paniculata*, en för Skandinavien ny hybrid, in Bot. Notiser, Haft 5, p. 249, 1918.

Hoppner, H. *Orchis Wirtgenii*, ein Konstant gewordener Bastard vom Niederrheins. *Orchis incarnatus* form × *O. maculatus* form in Abh. Ver. Nat. Erforsch. der Niederrheins, ii., 55, 1916. *Orchigymnadenia Hahnei*=*Gymnadenia conopea* × (*O. incarnatus* × *maculatus*), *l.c.*, ii., 51, 1916.

Hort, Sir Arthur, Bart., M.A. Theophrastus' Enquiry into Plants, and Minor Works on Odours and Weather Signs. With an English translation. 2 vols., 10/-. See *Rep. B.E.C.* 77, 1917. Although written by Theophrastus nearly 400 years before Christ there are parts of it which might well have been written in the nineteenth century. The main structure of plants, their stems, roots and leaves, are recognised and described, and at least one term, pericarp, used by him is still employed. Due recognition of the genius of Theophrastus was made by Sir John Hill in the introduction to his enormous work, *The Vegetable System*, but thanks mainly to the pernicious influence of Sachs the work of the great Greek botanist was belittled and undue prominence given to the German students whom he called the "Fathers of Botany." We know to our cost how the same pernicious system pervaded our class-rooms and museums, and how so many of our incompletely educated teachers and curators followed on the same trail. It is well, therefore, that a more fitting perspective and a truer insight into the origin of the science of Botany should be placed within the reach of all. Is it yet too late to entreat those who have sat at the feet of German thought to leave our classification so far as our public herbaria are concerned on the Bentham and Hooker basis, and not to boom a system such as Engler and Prantl's which in many ways is as imperfect as the one which it is intended to supplant?

Humbert, E. P. A Striking Variation in *Silene noctiflora* in Bull. Torr. Club xlv., 157, 1917.

Humphreys, John. A Survey of the Flora of East Worcestershire in Proc. Birmingham Nat. Hist. Soc., xiv., pt. ii., pp. 61. This gives a valuable historical summary of the plants recorded in three of the four botanical districts into which the county has been divided in Amphlett & Rea's *Flora of Worcestershire.* Many of the plants mentioned for the Lickey division are now extinct. *Ranunculus Baudotii* still grows in an inland situation at Bilberry Hill, and *Geranium phaeum* and *Scrophularia vernalis* are naturalised at Hewell where Don once worked. Are *Diplotaxis tenuifolia* (railway embankment) and *Silene nutans* (cornfield) correctly identified? The biennial form of *D. muralis* and *S. dichotoma* may have been mistaken for them. The description of *Orchis latifolia*, near Stanklin Pool, suggests that the plant is *O. praetermissa.* In 1907 Mr Humphreys noticed two plants of *Senecio squalidus* at Droitwich. " Now it covers both sides of the line for half a mile showing as a sheet of gold in June."

HURST, C. P. East Wiltshire Mosses, Hepatics and Land Shells in Wilts Arch. & N. H. Mag. xl., 231, 1918

HUXLEY, LEONARD. LIFE AND LETTERS OF SIR JOSEPH D. HOOKER, O.M., G.C.S.I. Based on materials collected and arranged by Lady Hooker. 2 vols., i., pp. xii., 516, ii., pp. viii., 569. 1918. John Murray, London ; 36/- nett. " Dedicated to the memory of many friendships." A very valuable review from the pen of our member, Mr H. J. Elwes, appears in the *Gardeners' Chronicle* : another, not less happy, written by Mr G. W. E. Loder, appears in the *Kew Bulletin* p. 349, 1918. From this a sentence or two may be quoted— " Hooker stands out as the greatest authority the world has yet produced on the subject of the distribution of plants : although he did much other work, this alone confers on him immortality." Three Essays of his—*On the Distribution of Arctic Plants*, 1860, *His Introductory to the Flora of New Zealand*, 1853, and *The Introductory Essay to the Flora of Tasmania* in 1861 are of the highest order. His great botanical work was that of the *Genera Plantarum* which, with the collaboration of Bentham marks, as Mr Huxley his godson says, an epoch in Botany. Hooker regarded the much vaunted Engler's system " in the abstract as neither better nor worse than De Candolle's and far more troublesome to apply for practical purposes." With Mr Loder we agree that " this is comforting to the many who hold that until Science can supply something nearer finality it is better to adhere to a widely accepted and established arrangement." Every British botanist, indeed every naturalist who can afford it, ought to purchase these two handsome volumes, which, even in war times, are well printed and displayed on the high standard long ago set by the publishers. In them we see Evolution as a theory in the making, and to every follower of Darwin they are indispensable. His extant correspondence with Darwin extends to 700 sheets and that of Darwin to Hooker to 800 sheets. Of these a wise selection has been made. Hooker was indeed a great man and his dominating influence in Botany for over half a century was unquestioned. His first scientific essay was written when he was nineteen, his last at 94. Not only was he a great botanist, he was a great explorer and scientific voyager. Without this world-wide experience he could never have attained his supremacy. Then his range of learning was not only comprehensive but he had the rarer faculty of effective concentration. These points in his wonderful career are well brought out by the able Editor. Hooker, although not of robust health as a youth, rather may we say that because he was not of robust constitution in his early years, was yet able to keep himself mentally sound to his latest days. After he was ninety, when staying with him at The Camp, I saw him busily engaged in teasing out the vexingly delicate flowers of an *Impatiens* for a microscopical examination. His memory was remarkable. He then told me he well remembered coming to Oxford as a boy of fourteen when his father examined the Dillenian mosses and the fact of the sheets being bordered with a strip of wall-paper was recalled. To this accurate memory Oxford is indebted for he remembered seeing some Wedgwood medallions of Banks and Linnaeus in Daubeny's house. A subsequent search revealed them safely packed away. They now hang over the fire-place in their original position. Hooker had, as any one who reads these volumes will see, the great gift of making friends. Naturally such a gift also brings the power of making enemies. The account of his duel with Ayrton is told afresh in an age to which its echoes hardly reach. Hooker was fortunate in his married life, and these volumes could never have reached the completeness they attain had it not been for the assiduous care in preserving and collating material displayed by Lady Hooker. Very pleasant accounts are given of his travels. One wishes there was space for more, but from them we gather that the splendours of the

Antarctic world affected him very deeply. In answer to a question once put by the writer as to what he considered the most impressive scenery of the world from a botanical point of view Sir Joseph said, without doubt, the Nepalese Himalayan slopes with their wealth of Rhododendrons. His maps made in his journey through Sikkim, as we gather from Huxley's book, were so good that in 1903 the Boundary Commission telegraphed their congratulations from the front on the accuracy of his labours, Hooker then being eighty-six. One of the senders of the telegram is now in all appropriateness the Director of Kew. On his journey Hooker looked down into Tibet from a height of over 15,000 feet. Among Hooker's life-long friends was Huxley, and in his support and in defence of Darwin Hooker scarified Bishop Wilberforce at the meeting of the British Association at Oxford. There are various versions but what is quite certain is that Huxley in his epigrammatic reply, splendid though it was*, was scarcely heard throughout the room so that Hooker's speech, which was well delivered, was most effective. It fell to my lot to hear Huxley himself propose a vote of thanks to Lord Salisbury for his address at another meeting of the Association, an address which Hooker did not applaud, and this led to the previous meeting being discussed by ear-witnesses to the episcopal discomfiture. So far as British Botany is concerned we find but little mention in these volumes. The distant scenery of Madeira reminded him of some of the Argyllshire islands and the romantic view from the Curral (lucky was he to see it in that mist-haunted spot) recalled that obtained "as you suddenly emerge upon the Glen of the Doll [not Dale], and Glen Phee [not Dhu] stretches away on one hand and on the other you look down into the broad valley of Clova." The references to the *Student's Flora* are not numerous. In 1877 he writes to Asa Gray—" nothing strikes me as so curious as the contrast with your *Manual* in respect of the limits of species. Will you ever be bothered with the sub-species and varieties that drive me frantic and in my view are not worth the time they take to elucidate? " This too is the opinion of many, even at the present time, but it strikes one as a little inconsistent coming from so earnest an exponent of evolution, since that is the course which nature is supposed to take, and without these trifling intermediate stages, many of which like way-side stations deserve to have distinguishing names, the whole theory of Evolution is jeopardised. Probably Asa Gray might have replied to the question asked by saying that so long as our country has 15,000 big species to describe the others will have to wait. Anent the British Floras there seems to be a slip. On p. 275 there is an allusion to a *fourth* edition of the *Student's Flora* in 1897. This is unknown to me. Perhaps it refers to Hooker's edition of his friend Bentham's *Handbook*. At the end of the volumes there is a portentous list of the honours showered upon Hooker. Even this is not exhaustive. A very minor one is omitted —that of his Hon. Membership of the Northamptonshire Natural History Society in 1876. From this very humble one to the proud and restricted possessorship of the Order of Merit, the whole civilised world bears testimony to his powers. One more tribute is added in these two volumes written by his god-son. Besides the value the work has in throwing a search-light upon the mind of a great naturalist, and the mass of particulars given, there is a special feature in the brief and accurate memoirs of his fellow-workers which are included as footnotes. These will prove of permanent use. Hooker's motto was " En la rose je fleuris." When one remembers his *Flora Antarctica*, his *Flora of New Zealand and Tasmania*, his Voyages and Travels, his *Flora Indica*, his exploration of Marocco, his joint work in the *Genera Plantarum*, his geographical distribution for the *Index Kewensis*, and his own *Student's Flora* we may safely add " by his fruits shall you know him."

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*The Bishop had insolently asked if Huxley traced his descent from a monkey through his grandfather or grandmother. Huxley replied that a man had no reason to be ashamed of having an ape for his grandfather. "If there were any ancestor whom I should feel shame in recalling it would rather be a man of restless and versatile intellect who, not content with an equivocal success in his own sphere of activity, plunges into scientific questions with which he has no real acquaintance only to obscure them by an aimless rhetoric and distract the attention of his hearers from the real point at issue by eloquent digression and skilled appeals to religious prejudice."

JACKSON, B. DAYDON, Ph.D. Notable Trees and Old Gardens of London in Trans. S.E. Union of Scientific Soc., 1917. The author gives as the first notice of a London Garden the reference of William Fitz Stephen or Stephanides who died about 1190—" Undique extra domos suburbanum horti civium arboribus consiti, spatiosi et speciosi, contigui habenter." Dr Jackson in his usually exhaustive and erudite manner gives a charming sketch of the various old-world gardens of London and their remains, special reference of course being made to those of Syon House, the trees in which have been recently catalogued by our member, Mr A. Bruce Jackson. He rather scornfully alludes to the garden of Sir John Hill at Bayswater as the place where he grew his "herbs for his quack medicines." It was more than that, but even if it were as Dr Jackson states he only forestalled a recent fashionable craze. We find in his introduction to the *Vegetable System* of 1761, which he dates from Bayswater, that the plants he describes "have furnished their own characters: not the accounts of those who had elsewhere seen them. They have been raised for this purpose in a garden where no manure has even been admitted: and where there are not single plants but whole beds of them. . . . I may therefore be allowed to hope the representations are to be depended on." He goes on to say that Lord Bute supports the garden where the plants are raised and he directs how the study of them may be made most useful. A restudy of Hill's works, or perhaps in some instances, a study of them, would lessen the amount of vituperation some botanists think it necessary to shower upon him.

Jeffreys, Harold. On the Vegetation of four Durham Coal Measure Fells, in New Phytologist vol. v., 129, 1917.

Jensen, C. H. Studies on the Morphology of Wheat. Bull. 150. State Coll., Washington, pp. 21., t. 5, 1918.

Johnson, Rev. W. An Addition to the British Lichen Flora, *Sarcopyrena gibba* Nyl., from St Bees, Cumberland in Naturalist. 103, 1918.

Journal of Ecology. Vol. vi., 1918. Subscription £1 1/-. Cambridge University Press, Fetter Lane, E.C.

The Journal of the Horticultural Society is as usual full of interesting matter. At various meetings throughout the year Mr J. Fraser, F.L.S., exhibited *Anthoxanthum Puelii* (grounds of Holland House), seedling of *Alnus* (from near the Thames), forms of *Agrostis alba*, *Prunus spinosa*, *Pyrus Aria* from Surrey, *P. torminalis* and *Mentha rotundifolia* × *viridis* from near Swanage.

Juel, H. O. von. Plantae Thunbergianae. 8vo., pp. 462. A.-B. Akademiska Bokhandeln, Upsala, 1917.

Junge, P. Die formen der *Anemone*-Arten des Schelswig-Holst. Florengebeits in Allg. Bot. Zeit. xxi., 107, 1915. Describes several forms of *A. nemorosa*. One, *asepala*, may be the same as the var. *apetala* Salisb. (See *Rep. B.E.C.* 397, 1916). Others are forma *latisepala* and *stenosepala*.

Kraepelin, Dr Karl. Exkursionsflora für Nord und Mitteldeutschland. Drück und Verlag von B. G. Teubner in Leipzig und Berlin. 1917. 4.10 marks, Seiten ; in Liv. geb. 4.80 marks.

Lacaita, C. C. Journ. Linn. Soc. xliv., 125, 1917. Two critical Plants of the Greek Flora, *Thymus Sibthorpii* Benth. and *Crepis rutilans* nova sp., the latter based on two specimens collected by J. Ball and G. C. Druce in Corfu. The latter is allied to *rhoeadifolia* and *foetida*, but it lacks the bitter-almond smell of that species. Piante Italiane Critiche o Rare, x.-xliv. in Nuovo Giornale Botan. Italiano, vol. xxv., Nos. 1 and 2, pp. 1, 97, 1918.

Lauterbach, C. Beiträge zur Flora von Papuasien, vi., pp. 19-144. Botanische Jahrbücher, erstes heft, 1917.

Leechman, Alleyne. The Genus *Rhizophora* in British Guiana in Kew Bulletin, No. 1, p. 4, 1918.

Lees, F. Arnold. Colonist Alien Heron-bills [*Erodium*] of Yorkshire in Naturalist 379-386, 1918. The Floral Sanctuary of a Meanwoodside Garden, *l.c.*, p. 373.

Leveille, H., and Blin, C. Les Carex de France in Bull. Geographie Botanique, xxvii., p. 1, 1918.

Leveille, H., and Jamin, V. Les Herbes de nos Champs et de nos Prés in Bull. Geographie Botanique, xxvii., pp. 86 and 89, 1918.

Linnean Society ~~Transactions.~~ January 17. Some Early Cape Botanists, based upon the material preserved in the Sloane and

Banksian collections in the British Museum by James Britten. Hybrid *Stachys*, C. E. Salmon. It originated in his garden at Reigate where only *S. germanica* and *S. alpina* were cultivated. It is *S. intermedia* Aiton Hort. Kew. ii., 301, 1789. February 7. The *Panphyton Siculum* of Francesco Cupani, a very rare botanical work issued in 1713. Described by Dr Daydon Jackson. An apparently unique copy of *L'Histoire et Pourtrait des Plantes* published at Lyon in 1561 was also shown. May 21. The President, Sir David Prain, gave his Presidential Address on " The Effects of the Business of Life on the Beginning of the Science of Natural History." This delighted the large and sympathetic gathering being a scholarly and thoughtful thesis full of touches of quiet and refined humour. It is to be regretted that the exigencies of war prevented it being as widely published as its intrinsic value demands. At the meeting the highest honour the Society can bestow was conferred on Dr F. Du Cane Godman, the father of one of our members, for his laborious services to Natural History not only in the Azores but in the gigantic fauna of the *Biologia Centrali-Americana.* Dr Godman had also served as the Treasurer of the Ray Society and is a Trustee of the British Museum. June 6. Mr C. C. Lacaita described five species of *Echium*, two being new—*E. judaeum* and *E. Coincyanum.* June 21. Mr Druce exhibited 21 of Bauer's drawings (See *Rep. B.E.C.* 143. 1917) and described and exhibited 10 British plants of which an abstract appears on p. 56 of the Transactions. They have been already published in the pages of our *Reports.* On p. 61 there is a very appreciative memoir by Beatrice Harraden of Kate Marion Hall who was for many years Curator of the Stepney Borough Museum and one of the founders of the School Nature Study Union. Miss Hall's energy and enthralling love of nature were used to pass on as far as possible a liking for Natural History to thousands of children who came within her ken. She took parties of children for rambles into the parks and open places teaching them to recognise the flowers and birds. This she did wisely so as to avoid wanton depredations which have done so much to create Nature Study into a destruction of Nature. As Miss Harraden says—" Her work has taught many thousands of children to note with intelligent eye the promise of spring, the fulfilment of summer, the decay of autumn and the sleep of winter."

MacBride, J. F. New and Interesting Plants in Contrib. from Gray Herbarium, Harvard University, new ser. liii., 1918.

MacCaughey, Vaughan. Strand Flora of Hawaiian Archipelago in Bull. Torr. Club, vol. xlv., p. 259, 1918. The Hawaiian Sumach in Torreya, vol. xviii., p. 183, 1918. The Hawaiian Violaceae in Torreya, vol. xviii., p. 1, 1918.

MacLeod, Prof. Julius. Journ. Linn. Soc. xliv., 1917. Comm. Prof. Weiss. Quantitative Description of Ten British Species of *Mnium.* The author says " our method of describing animal and vegetable species has made little progress since the days of Lamarck and De Candolle. . . . The result of this state of things is that it is often very difficult—in fact impossible—to identify a specimen even by the best books. . . . Is it possible to adopt a better descriptive method? . . . Is it possible to describe and identify an animal or a vegetable species by means of numbers representing the values of the specific characters? " He replies by applying such a principle to the ten species of *Mnium* and he made thirty thousand measurements in order to prepare this article which systematic botanists will do well to study before answering in the negative the question he propounds.

Maiden, J. H. Weeds of New South Wales. *Ranunculus sceleratus*, of which a figure is given, is called the Poison Buttercup. Among others are *Lactuca serriola* and *Centaurea solstitialis.* New South Wales Agr. Gaz., xxvii., pp. 46-48, and xxviii., pp. 244-246.

Martineau, Mrs P. The Herbaceous Garden. 8vo., pp. xx., 298, 1917. Third edition. Williams & Norgate; 7/6.

Merrill, E. D. An Interpretation of Rumphius's Herbarium Amboinense. Bureau of Printing, Manila, 1917.

Minod, Marcel. Contribution à l'Etude du Genre *Stemodia* in Bull. Soc. Bot. de Genève, ser. 2, vol. x., p. 155, 1918.

Moffat. C. B. Losses from Local Flora [Enniscorthy] in Irish Naturalist, 157, 1917.

Monckton, H. W., Treasurer of the Linnean Society. The Flora of the District of the Thames Valley Drift between Maidenhead and London.

MORRIS, Sir DANIEL, K.C.M.G. The Mistletoe, its Life History and Associations with Primitive Religion, Folk-lore, and Superstitions. Reprinted from the *Bournemouth Guardian*, December 23, 1917. *Viscum* rarely grows on the Pear, but Sir Daniel gives an example from Belvoir Castle and from Brynwyn, Hereford, recorded in the *Flora of Hereford.*

MOSHER, EDNA. The Grasses of Illinois. III. Agr. Exp. Sta. Bull. 205, 261, 425, 1918.

THE NATURALIST, 1918, edited by T. Sheppard, M.Sc., and T. W. Woodhead, Ph.D., M.Sc. Famous Yorkshire Botanists. A Floral Film, J. Bayford. Colonist Heron-bills [*Erodium*] of Yorkshire, F. A. Lees.

NATURE, 1918. Published by Macmillan & Co., St Martin's Street, London, W.C.

NELSON, T. C. Addition to the Flora of Western Oregon in Torreya, vol. xviii., p. 21, 1918.

NEUMAN, L. M. *Rubus acupilosus* Liaf., och *R. nemoralis*, var. *Ruedensis* Liaf. in Bot. Notiser, Haft 5, p. 261, 1918.

NEW PHYTOLOGIST, edited by A. G. Tansley. Wesley & Sons; 15/-.

OESTRUP, E., and HESSELBO, AUG. The Botany of Iceland. Marine Diatoms and Bryophyta. J. Frimodt, Copenhagen, 1918.

OLIVER, F. W. THE EXPLOITATION OF PLANTS. By various writers, edited by F. W. Oliver. Imperial Studies Series, pp. 170. J. M. Dent & Co.; 2/6.

OLIVER, F. W., and CAREY, A. E. TIDAL LANDS: A STUDY OF SHORE PROBLEMS, pp. xiv., 284, tt. 29. Blackie & Son, London; 12/6.

OLIVER, W. R. B. Vegetation of Lord Howe Island in Trans. New Zeal. Inst. xlix., pp. 94-161, 1917. Although only of small extent—not more than 5 square miles—the surface rises to 3000 feet. It has an annual rainfall of about 50 inches. It has about 70 endemic species and 4 endemic genera, the total number of genera being 169.

ORCHID REVIEW. Edited by R. A. Rolfe, A.L.S. 7s bi-monthly. × *D. Hepburnii* (see *Rep. B.E.C.* 211, 1915) p. 151. British Marsh Orchids p. 162. This and my paper on Palmate Orchids were written quite independently. Mr Rolfe still retains the three old names *maculata*, *latifolia*, and *incarnata*. This paper is worth reading, and we hope to find room for it in a future *Report*. Meanwhile there seems nothing in it to induce me to change the views expressed in the paper referred to.

OSTENFELD, C. H. Smaa Bidrag til den Danske Flora, VII. Botan. Tidsk. Bind 36, Hefte I., 43, 1917. This includes *Rubus vulgaris*, var. *laciniatus* (Willd.), *Prenanthes purpurea*, *Anemone nemorosa*, *var. caerulea*, *A. apennina*, *Amsinckia spectabilis*, *Naias marina*, *Alisma graminifolium*, *Potamogeton panormitanus*, *Typha hybrida*, *Poa pratensis*, var. *irrigata*, var. *sub-biflora*, nov. var., *P. trivialis*, var. *pallescens*. *Scirpus lacustris* × *Tabernaemontani* is described at length and once again our Charad reappears under a new name, *Nitellopsis stelligera* (Bauer) Migula. Botan. Tidsk., *l.c.*, Bind 34, 346, 1916. Nogle Bemaerkninger om vore Enaarige *Sonchus*-arter. In this suggestive paper Dr Ostenfeld mentions *Sonchus oleraceus*, var. *lacerus* (Willd.) from the Lizard, Cornwall, and Queenstown, Co. Cork, and var. *albesceus* Neum. from Ireland, already mentioned in *Rep. B. E. C.* Randersdalens Plantevaekst in Randers Fjords Naturhistorie, Kap. iv., pp. 155-270, 1918. This is a valuable ecological study of the interesting area, well illustrated with vegetation maps and with excellent illustrations of the plants. notably *Saxifraga Hirculus*, *Stratiotes* and the grasses. The flora consists almost entirely of plants found in Britain, *Archangelica* and *Alisma graminifolia* being notable exceptions. *Phragmites* and *Typha angustifolia* are very luxuriant. Is *Statice Armeria* specifically distinct from our British *linearifolia*? There is also a valuable account of the Phytoplankton a subject on which Dr Ostenfeld speaks with authority. Contributions to West Australian Botany in Dansk. Bot. Forening, Bind 2, n. 8, 1918. Includes a Revision of the W. Australian species of *Triglochin*, *Crassula* and *Frankenia*, and describes a new species, *Crassula Miriamae* from Perth. A useful clavis to the Frankenias is given, three new species being described. Bemaerkninger om Danzke Traeers og Buskes Systematic og Udbredelse. I. Vare Aelme-Arter. Dansk Skovforenings Tiddsk. 1918. Treating of the Danish Elms the author gives leaf-figures of *U. laevis* Poll. (Liselund); *U. glabra* Huds. (Store Heslehave) [*montana*]; "*U. glabra* Huds., var. *nitida* Fr." (Vikso); *U. vegeta* (Loud.) Schneid. (Sjaelland); *U. campestris* L. (Lolland, &c.), which he calls smaafladet Aelm; the Engelsk Aelm, *U. sativa* Mill. (Sjaelland) and he gives a clavis to these species. It will be observed that he uses the name *U. campestris* L. instead of *U. nitens* Moench which is used in the *Cambridge Flora*. This name, selected by Dr Moss, is untenable for another reason: it is antedated, as Dr Williams points out, by *U. carpinifolia* Borck. At any rate Ostenfeld is nearer the fact than the *Cambridge Flora* which retains *campestris*. *U. sativa* is retained but whether the Cork Elm really belongs to this plant seems somewhat doubtful and as Prof. Henry, with great force, suggests that *U. sativa* Mill. means the English Elm., it can therefore scarcely be the same as Dr Ostenfeld says. The last word on Elm nomenclature has not yet been said. I see no reason for giving up *U. Plotii* for the graceful small-leaved tall Elm of Northants, Oxon, &c., a name which is free from the ambiguity which attaches to *minor* or *sativa*.

Ostenfeld, C. H., og Dahl, Ove. *Arenaria ciliata* in Nyt. Mag. for Naturvid. lv., p. 215, 1917. In this paper the author divides the Linnean species into three sub-species—(1) *hibernica* from Ben Bulben, (2) *pseudo-frigida* from Nova Zembla, Spitzbergen, Lapland, East Greenland, Arctic Norway and Dolgo Bay, (3) *norvegica* (Gunn.) Fries from northern Europe and Canada, but the Sutherland locality is omitted, nor is any reference made to *A. gothica* save a foot-note "hrer saale saaleded ikke med under dette kollektivbegreb."

Parish, S. B. Notes on Southern Californian Plants in The Botanical Gazette lxv., p. 334, 1918.

Parkin, J. Vitality of Seeds in Nature, 1918. Some forty acres of Gorse and Heather-covered land. . . . in the plain of Cumberland were drained, cleaned and ploughed in 1893. This area was kept in arable rotation till 1904 when part of it was laid down in grass, the remainder in 1906. It soon became evident that this new pasture would rapidly revert to a Gorse-covered common unless drastic measures were taken to rid the ground of the numerous Gorse seedlings which had sprung from the seeds brought to the surface by the last ploughing. These were stubbed out and in two or three years time the ground was entirely free from Gorse and has continued so for the ten or more years it had been allowed to remain in permanent pasture. Last winter this land. . . . was sown with oats. The crop has now been reaped and Gorse seedlings, six inches or more in height, are to be seen scattered over the stubble, being especially abundant where the Gorse grew strongest. Evidently the last ploughing has brought to the surface a fresh lot of seed.

Payson, E. B. Notes on Certain Cruciferae in Annals of the Missouri Bot. Garden, vol. v., 2, p. 143, 1918.

Pearsall, W. H. On the Classification of Aquatic Plant Communities in Journal of Ecology vi., 75, 1918. The Aquatic and Marsh Vegetation of Esthwaite Water, *l.c.* v., pp. 181-202, 1917, and pp. 53-74, 1918. This is a valuable contribution to the plant ecology of the area in which Mr Pearsall's father discovered *Hydrilla* and *Naias*. It contains not only a very clear and complete account of the vegetation and its associations but also the results of a considerable number of soil analyses. Esthwaite Water is much more turbid than Windermere. Objects, as Mr Pearsall says, cannot be recognised at a greater depth than 4 feet in the former but are easily made out at 12 feet in the latter. This may account for the *Hydrilla* remaining so long unnoticed. The water is loaded with peat and has an acidity ten times greater than Windermere or five times greater than that of Coniston, whereas the Norfolk Broads have basic reactions, and have much more mineral matter in solution.

Pegler, A. On The Flora of Kentani in Annals of Bolus Herbarium, S. Africa. vol. ii., p. iv., 1918.

Pickard, J. Fry. *Erinus alpinus* in W. Yorks and S. Lancs in Naturalist 347, 1917.

Praeger, R. Lloyd. Botanical Notes from Iniskioge in Irish Naturalist xxvii., No. 7, p. 103, 1918. Some Co. Down Plants, *l.c.*, xxvii., No. 8, p. 116, 1918. *Sedum Praegerianum*, *Rhodiola* in Proceedings of the Botanical Society of Edinburgh xxvii., p. 7.

Prain, Sir D. The Genus *Chrozophora* in Kew Bulletin, No. 2, p. 19, 1918. A New *Meconopsis* from Yunnan in Kew Bulletin, No. 5, p. 211, 1918.

Riddelsdell, Rev. H. J. *Rubus* in Gloucestershire in Proc. Cotteswold Nat. Field Club xix., 213-227, 1917. In this compact brochure 86 species, 10 varieties and nearly 20 hybrids are given for the county.

Robbins, W. W. The Botany of Crop Plants. pp. xix., 681. figs. 263. P. Blackiston's Sons & Co., Philadelphia; 2 dollars nett.

Robinson, Benjamin Lincoln. A Monograph of the Genus Brickellia. Memoirs of the Gray Herbarium of Harvard University. Harvard University Press. pp. 151, tt. 95, 1917. Here is a model Monograph of a critical genus closely allied to *Eupatorium* in which are treated in a masterly manner 91 species. The clear and able definitions of the sections and species, the complete and accurate synonymy, the exhaustive citation of herbarium specimens, and the excellently drawn text-figures alike commend themselves. The dubious species are accounted for and all the available information supplied. A most valuable List of Exsiccatae is added. The paper and printing are alike of good quality. One only wishes the British Brambles, Roses or Hawkweeds could be dealt with in as useful and attractive a manner. The only point of criticism one ventures to make is in the choice of the generic name itself. As its author himself admits, *Brickellia* was only established by Elliott in 1822, but in 1817 Cassini in the *Bull. Soc. Phil.*, and in 1818 in the *Dict. des Sc. Nat.* x., 36, had established the genus under the name *Coleosanthus*. It is to be admitted that Cassini included in it plants that were not congeneric and that the genus was more precisely limited by Elliott. If this reason were sufficient to invalidate a generic name how few could stand. It is also urged that for many years *Coleosanthus* was passed over. Kuntze surely rightly restored it in 1891. At the German-dominated Congress it was arbitrarily put in the "Nomina Rejicienda," but one would not be surprised if before this note appears the school of botanists which follow the American rules had transferred the new combinations under *Brickellia* to the genus *Coleosanthus*, so that that name is not unlikely in the whirligig of time once again to prevail.

Rock, J. F. New Species of Hawaiian Plants in Bull. Torr. Club xlv., p. 133, 1918.

Rogers, W. E. Notes on *Melilotus alba* in Proc. Iowa Ac. Sc. 415, 1917.

Roper, Ida M. *Spartina* & Coast Erosion in Kew Bulletin, No. 1, p. 26, 1918.

Rubel, Edouard, and Braun-Blanquet, Josias. Kritisch-syst. Not. . . . Arten. . . . Gatt. *Onosma*, *Gnaphalium* and *Cerastium* in Viertelj. der Naturf. Gesell. Zürich, 599, 1917. Several new subspecies of *Onosma* are described, and under *Gnaphalium sylvaticum* L. our common British form is described as forma *rectum* (Sm.) Br.-Bl. = *G. rectum* Sm. E.B. t. 124 = var. *rectum* Gaudin Fl. Helv. v. 243, 1829. The plant from Scotland I described as var. *nigrescens* seems to be the var. which these authors identify as var. b. *pumilum* Gaud. Fl. Helv. v., 244, 1829 = var. *minor* Godet Fl. Jura 370, 1852, var. *nigrescens* Gren. Fl. Jurass. 427, 1881, var. *alpestre* Brügger Jahresb. Nat. Ges. Graub. xxxix., 121, 1886, var. *spadiceum* Druce, *Rep. B.E.C.* 200, 1916. *G. supinum* has forma *fuscum* (Scop.) = var. *fuscum* Gaud., *l.c.* 241, forma *uniflorum* (Monnard Br.-Bl.), forma *elatum* Vacc., forma *congestum* Br.-Bl., forma *subacaule* Wahl., and forma *balcanicum* Br.-Bl. A critical description is given of *Cerastium latifolium* and its allies.

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Thistleton-Dyer, Sir W. T., K.C.M.G. On Some Ancient Plant Names in Journal of Philology xxiv., pp. 290-312, 1918. These papers of the late Director of Kew contain much valuable matter as was to be expected of their erudite author. He identifies (with Sprengel) the Ακορον of Dioscorides with *Iris Pseud-acorus*. It had been often used wrongly for *Acorus Calamus*. Another of our British Plants (or an allied species) known to Theophrastus which he names Αφια and which had wrongly been suggested to be Coltsfoot, Dyer (with Sprengel) suggests is *Ranunculus Ficaria*. He also adopts the ingenious suggestion that ἐλαιαγος of Theophrastus, growing at Lake Copias, is *Salix caprea* not *Tamarix* or *Myrica Gale*, the latter being arbitrarily given by Linnaeus. It is not a southern species. Dyer himself pertinently suggests that the native Greek tree named six times as ἀφάρκη and once by Pliny as *apharce* is the hybrid *Arbutus andrachnoides* which I have seen on Pentelicon. The questions relating to Papyrus and Ebony are treated in a very scholarly way. It is suggested that the former was introduced to the Nile from Nubia, and when its cultivation for economic purposes ceased the plant itself died out in the same way as *Persea*, identified by Schweinfurth as *Mimusops Schimperi*, from Southern Arabia. *Datura Stramonium* (Datourah is the Arabic name) is suggested to be, as Colonna long ago pointed out, the πέρσιον. Galen's plant of that name was probably *Hyoscyamus muticus*, which the Germans had recently cornered in Egypt as it yielded a larger percentage of Atropine than the British *Atropa Belladonna*. It was known to the Babylonians to produce madness. Schweinfurth says it is called in Arabic tatourah. The Πόθος of Theophrastus confused two plants one with blue the other with white flowers. Dyer suggests that the former is *Delphinium Ajacis* and the latter *Asphodelus ramosus*. The roots of the latter were a common food of the Greeks, and its funereal suggestion has an echo in its being planted on graves " as food for the dead." Certainly in these illuminating pamphlets the author has given us much food for the mind.

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Note on *Stevia Rubaudiana* Hemsl. in Kew Bulletin 343, 1918. Not without justification it has been called "the sweetest plant in the world. Two principles contained in it are a glucoside, estevin, and rebaudin. Each of these is said to taste 150-180 times sweeter than sugar. The dried leaves are said to possess 40-45 times the sweetening power of any other known natural substance. They are readily preserved and easily powdered. Of course the nutritive properties of sugar are lacking. The plant is a native of Paraguay and might, it is suggested, be readily grown in the West Indies.

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Watson Botanical Exchange Club Report, 1917-18. Hon. Secy., G. Goode. Distributor, Miss I. M. Roper, F.L.S. Contains a portrait of E. W. Hunnybun.

Watson, W. Cryptogamic Studies of the Sand-dunes of the West Coast of England in Journal of Ecology, 126, 1918.

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Wilkinson, H. J. Catalogue of British Plants in the Herbarium of the Yorkshire Philosophical Society in Naturalist 115, 1918.

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Willis, J. C., M.A., Sc.D. The Sources and Distribution of the New Zealand Flora, with a Reply to Criticism in Annals of Botany. 339, 1918.

Wilson, A. *Malaxis paludosa* Sw. and *Salix herbacea* L. in North-West Yorkshire in the Naturalist, p. 335, October 1918.

Woodruffe-Peacock, Rev. E. A., F.L.S. The means of Plant Dispersal in Selborne Magazine, 20, 1918. Moisture and Mud Carriage. A most suggestive paper in which its capable author says that during the last twenty-four years he has seen practically the seeds of every pasture, meadow and tilth species carried by moist or muddy boots, &c., with two exceptions, *Cardamine pratensis* and *Ranunculus Ficaria*. These two species rarely produce ripe seeds which the author thinks is due " to the early spring night frosts." May the cause not be due to the easy way these plants have of propagating themselves, the one by its tubers, the other by its leaflets which develop root-fibres. Probably *Juncus tenuis* is frequently carried on the mud attached to cart-wheels, and I saw seeds of *Sisyrinchium* *californicum* in Wexford in the pads of earth thrown off the feet of horses and cattle. This explains the frequent occurrence of plants of *Coronopus procumbens* in the bare places about gateways and pond margins.

WOOLSEY, T. S., jun. French Forests: Tunisia, Algeria and Corsica. The author states that Tunisia has 1,600,000 acres of forest (Zeen Oak, *Quercus Mirbeckii* and Cork Oak, *Q. Suber*), Algeria 7,000,000 acres, largely Cork and Aleppo Pine and Corsica about 350,000 acres, chiefly Corsican Pine.

WORKMAN, F. B. and WORKMAN, W. H. TWO SUMMERS IN THE ICE-WILDS OF EASTERN KARAKORUM, pp. 296, 1917. T. Fisher Unwin, London; 25/- nett.

YAPP, R. H., JONES O. T. and JOHNS, D. The Salt Marshes of the Dovey Estuary in Journal of Ecology v., 27, 1917. This valuable contribution traces the geological history of the area. allusion being made to the submerged Borth forest. The distribution of Vegetation on the Flats of the Dovey valley follows. In the moorland grow, among others, *Rynchospora fusca*, *Andromeda*, *Drosera anglica* and *longifolia* and *Utricularia* sp., probably *intermedia*, and *Oxycoccus*. *Pinus sylvestris* occurrs as a discontinuous belt, and it is suggestive that the submerged forest, presumably consisting of the same species, may have been the ancestors of the present trees. As the authors say "the possibility of such a continuity cannot be ruled out on *a priori* grounds." An instructive figure is given of the root system of *Glyceria maritima*. This plant "when colonising bare silt, forms long creeping shoots which spread rapidly. Later as the sward becomes higher and denser, the mode of growth changes. The main shoots take up a more erect position and grow slowly or even die away, while a succession of lateral shoots of limited growth appears, giving the plant a close tufted habit." This has a bearing on such arbitrary characters of caespitose and non-caespitose as applied to specific differentiation of *Glyceria* species. An equally instructive diagram is given of *Statice maritima*. The earliest permanent coloniser of the mud-flats is *Glyceria* which extends horizontally, collecting silt and forming low, flat hummocks. The article is splendidly illustrated with photographs.

Zimmermann, F. Neues aus der Adventivflora der Pfalz in Mitt. Bayer Bot. Ges. iii., 319, 350. München, 1916. *Ophrys Fuchsii* × *aranifera* in Ber. Bayer Bot. Ges. xvi., 86, 1917.

OBITUARIES.

Amphlett, John, M.A., S.C.L., J.P., born at Clent House, Worcestershire, and died there, June 23, 1918. For the past two hundred years his ancestors had been connected with national and county affairs of Worcestershire. He graduated at Worcester College, Oxford, and was called to the bar in 1870. In 1909, in conjunction with our member, Mr Carleton Rea, he issued the *Botany of Worcestershire* in a handsome, well-printed volume of 651 pages, in which the previous records and work were most conscientiously and thoroughly incorporated. The local names, uses and other details relating to plant history form a useful and pleasing feature. Mr Amphlett was for several years a member of our Society.

" In his earlier years he travelled a great deal and published a notable history of the fauna of the West Indies. He was one of the founders and for many years the editor of the publications brought out by the Worcestershire Historical Society. He brought out Habington's *Survey of Worcestershire* and also made a complete index to Nash's *History of Worcestershire*. He also published a model history of the village of Clent. He was deeply interested in antiquarian, archaeological, genealogical and botanical research. He joined the Worcestershire Naturalists' Club in 1871, and was President of that body from 1876—1878. He made several interesting additions to the flowering plants of Worcestershire. His death was deeply regretted by a large and admiring circle of friends who greatly esteemed his abilities and unflagging industry."—Carleton Rea.

Bagnall, James E., born at Birmingham, November 7, 1830, died at 96 Witton Road, Birmingham, September 3, 1918. In 1844 he began his commercial life in his father's warehouse, where he remained till 1853, when he was appointed to a responsible situation in the pen-manufactory of Messrs Hinks & Wells, whom he served for nearly 50 years. Like so many of our field botanists he had an early love for Natural History, but it was not until 1864 that he seriously commenced its study. The loan of a compound microscope induced him to examine a flower petal, and to correctly identify it he bought a copy of Purton's *Midland Flora* (now in the writer's possession) and later on Bentham's *Flora*, by which he was enabled to recognise the petal as belonging to the Herb Robert. The sight of a Hortus Siccus at a soirée of the Old Naturalists' Union started him on a pursuit which became for many years his main recreation. In 1866 he joined the Birmingham Natural History Society and subsequently became Secretary of the Botanical Section. He then commenced the investigation of the flora of Sutton Park, and published a list of the flowering plants, ferns and mosses in the *Proceedings of the Birmingham Natural History Society*, 1869. This suggested the preparation of a complete flora of Warwickshire which was originally published in the pages of the *Midland Naturalist* (vol. iv., 1881 et seq.). It met with the recognition of the Midland Union of Natural History Societies and so greatly impressed them that they conferred upon him the Darwin Gold Medal. In the first volume of the *Midland Naturalist* he wrote a paper on the *Distribution of the Genus Rosa in Warwickshire*. Roses and Brambles were long his favourite study. His name is associated with a Bramble, *R. mercicus* (*Journ. Bot.* 372, 1892), and its var. *bracteatus* (*l.c.* 187, 1894). To that Journal among other notes he contributed papers on *Agrostis nigra* With. (*l.c.* 65, 1882) and *Artemisia vulgaris*, var. *coarctata* Forsel. (*l.c.* 21, 1882). In 1886 Bagnall brought out an excellent little *Handbook of Mosses*, published at 1/- (Swan Sonneschein & Co.), and in 1891 his *Flora of Warwickshire* (pp. 519) appeared. This work, when one considers it was prepared when he was employed at a business house with extremely limited leisure, speaks volumes for his assiduity, not only in the field but in literary research, since the older botanical history of the county is thoroughly dealt with. It earned well merited commendation and eventually the Associateship of the Linnean Society. This Flora is an extremely complete one and contains Mosses, Fungi and Lichens, in addition to the Phanerogams. As our Honorary Member, Mr J. G. Baker, says,—" It is one of the best county floras that has been written, and will stand as a permanent memorial of his diligence and ability." Mr Bagnall was an old member of the Botanical Exchange Club and for many years was a valued contributor, recording in the *Reports* many rare plants of his county. In the *Midland Naturalist* he also frequently printed papers. In 1888 appeared a paper on Stour Valley and its Flora, adding *Tolypella glomerata* to the county. In 1901 he published *The Flora of Staffordshire* as a Supplement of 74 pages to the *Journal of Botany*, and in Amphlett & Rea's *Botany of Worcestershire*, published in 1909, the Mosses and Hepatics were from the pen of Bagnall. In the seventies and early eighties I frequently lectured at Mason's College to the Birmingham Natural History Society and there made his personal acquaintance. I found him a delightfully keen worker and well read in general literature. He was specially fond of books on travel, poetry and philosophy. Under his guidance the special plants of the vicinity were seen and on one occasion, when M. C. Cooke was a fellow visitor, an amusing incident occurred. I asked him if he could direct me to *Epilobium roseum*. "That is very easy," he said. Opening the back door in a small yard, not many square feet in extent, he showed it me growing. "Well, if it grows in your back-garden, it may in mine," I replied, and surely enough on my return to Oxford I went into the rarely visited place and saw growing two or three plants of the same species. In 1888 we had a delightful expedition to Ufton Wood with Canon Tuckwell and Bolton King to see *Calamagrostis canescens* which grew there in great abundance. It was a curious gathering—Tuckwell, the genial and erudite radical parson, Bolton King, fresh from Balliol, a pioneer in social reform, Bagnall, a Tory of the old school, all however having the same love of nature and its surroundings. Tuckwell, now, alas, with wisdom at one entrance quite shut out, and I were only last October talking of that occasion, now 30 years ago. Bagnall came of Wesleyan parents and was an omnivorous reader of religious books. With advancing years he grew more and more a stay-at-home. In his books and his pipe he found solace. For some years his faculties had been gradually failing him and he passed peacefully away in his 88th year without actual bodily ailment. He was never married. In 1913 he gave his extensive Herbarium to the Natural History Department of the City of Birmingham Museum. His rather large Library and MSS. have passed into the possession of the writer, to whom for many years he was a most valued correspondent and helper, and whose herbarium he enriched with many local species. Bagnall was one of our four corresponding members, and he richly deserved that place among us. An appreciative brochure, from which many of the foregoing details have been obtained, was published in 1897 for private circulation by our mutual friend, Mr E. W. Badger.

Bicknell, Clarence, born at Herne Hill, 1842, died at Val Casterino, Italy, July 17, 1918. He entered Trinity College, Cambridge, later taking Orders. In 1879 he went to Bordighera where he acted as Chaplain. He was the author of *The Flowering Plants and Ferns of the Riviera and Neighbouring Mountains*, a quarto volume, tt. 80, 1885, and *A Flora of Bordighera and San Remo*, issued in 1896. His name is commemorated in *Pimpinella Bicknelli* from Majorca and *Euphrasia Bicknelli* from the Italian coast. His Herbarium is left to the Botanical Institute of Genoa, and his Museum to the Commune. Death came to him when on the verandah of his mountain châlet and whilst talking of his beloved mountains and the flowers around.

" The death of Clarence Bicknell in July last at the age of 76 has removed one of the best known botanists of Southern Europe, a man of remarkable personal charm and gifted with scientific and artistic ability of the highest order. During his forty years residence at Bordighera he had systematically explored the Mediterranean region, publishing from time to time volumes on the flora of Bordighera and San Remo, and on the flowering plants and ferns of the Riviera and neighbouring mountains. These and likewise another book describing prehistoric rock-inscriptions found in the Italian Alpes-Maritimes are illustrated by hundreds of beautiful drawings. At his delightful summer residence high up in the Val Casterino di Tenda Bicknell hospitably entertained botanist friends of all nationalities, and there he died, as an Italian companion writes,—" Whilst talking of the mountains, the snows, and his adored flowers to which one might say he had devoted the chief energies of his life."—J Walter White.

Boyd, William Brack, born at Clifton, Roxburghshire, July 22, 1831, died at Faldonside, March 16, 1918, in his 88th year. He was the youngest son of Adam Brack Boyd of Cherrytrees, Yetholm, and was educated at the Grange School, near Durham, to which, before railways, he went by coach. He succeeded to the family estate on the Tweed, near Abbotsford, where he became an enthusiastic horticulturist and lived the life of a country gentleman. He married in 1862 Elizabeth Bell, only daughter of Mr James Wilson of Otterburn and Boughtrig, who, on the death of her uncle, succeeded to the estate of Faldonside. He was one of the original members of the Scottish Alpine Club, and on these occasions brought from the hills many of the rarities which he grew most successfully at Faldonside. The garden was an enchanted one to the writer for there, growing in ordinary garden loam, were *Carex Grahami*, *C. polygama*, *C. Vahlii* and *C. saxatilis* in rank profusion. From his earliest years he was fond of Natural History, and he fortunately had the time to foster his love, but it is to be regretted that he put so few of his experiences on record. His name is commemorated by Dr Buchanan White, who named a *Sagina*, *S. Boydii*, after him, (*Trans. Bot. Soc. Edin.* 33, 1887). It is at present one of the dubious plants of Britain. It was supposed to have been found by Boyd in 1878 in the Forest of Invercauld, Braemar. Unfortunately he did not remember gathering it there but only noticed it after his return home. The plant is unlike any British species, it does not seed and, although growing well at Faldonside where I saw it last September, it has only been multiplied by division. As it was only noticed subsequently in a potting shed there is just a chance that it may have had other than a British origin as Boyd was receiving plants from correspondents abroad at the same time. That is, I believe, the opinion of Professor Balfour, who made many enquiries shortly after its discovery, and of Mr A. H. Evans, who was at Faldonside just afterwards. I have seen no such plant in foreign herbaria. Next year I hope to make another attempt to find it on Ben A'an, where Mr Boyd on more than one subsequent occasion tried to refind it. His name is connected also with a most curious Willow which he found in Glen Callater, not far from the waterfall, Forfarshire, and which Linton named *S. Boydii*, and which he thought was a hybrid of *reticulata*, *lapponum* and possibly *herbacea*. It is not given in the *Cambridge Flora*. I have it in cultivation, but am not satisfied that the suggested parentage is correct and Boyd also doubted it. It is a most curiously rigid plant and we both wondered if *S. nigricans*, which grows there, might not enter into the combination. To horticulturists the family name is connected with the beautiful hybrid Burseriana Saxifrage, which was raised at Cherrysides by his brother. In 1907 Boyd added to the Scottish Flora *Dryopteris remota*, if indeed the plant in cultivation proves to be identical with Braun's assumed hybrid of *Filix-mas* and *spinulosa*. Boyd was with the Alpine Club when *Carex atrofusca* was gathered on Ben Lawers by Dr Paul and *Saxifraga caespitosa* in the Abinger Forest in Westerness. He was appointed President of the Edinburgh Botanical Society, and was twice President of the Berwickshire Naturalists' Club, of which he lived to be the senior member. Even till recent years he was a most constant attender at the excursions of both Clubs. He was spare of frame, active to the last and keen as ever about his plants. He was for many years a Justice of the Peace for Roxburghshire. His two sons predeceased him, the younger being killed in France in 1916. One daughter alone survives. Mr Boyd was buried in the precincts of Melrose Abbey.

Fry, The Right Hon. Sir Edward, P.C., G.C.B., D.C.L., LL.D., F.R.S., F.L.S., born at Bristol, November 4, 1827, died at Failand House, near Bristol, October 18, 1918, aged ninety. Educated at Bristol College and University College, London, he was created a Judge of the High Court in 1877, and promoted to the Court of Appeal in 1883. He was a Member of the Permanent Court of Arbitration at the Hague. In later years he devoted much time to the study of Mosses, Liverworts and the Mycetozoa, and in 1892 published an original and very useful book on British Mosses. With Miss Agnes Fry in 1899 he brote a work on the Mycetozoa, and in 1911 he published *The Liverworts, British and Foreign*. He had, however, a wide love of botany and a deep insight into nature's working. I well remember the delightful conversation in which he took a leading part at the Vernon Harcourt's—I am afraid to say how long ago—which was initiated by so prosaic a thing as a dish of the then rather unusual Chinese vegetable, *Stachys tuberifera*. His level mind and firm, yet conciliatory manner, made him an apt arbitrator, and among other important cases, he acted on the Casa Blanca dispute between France and Germany. These powers justified his title of "The Great Pacificator."

GEAKE, JOSEPH JOHN, born at Guildford, June 12, 1890, died there September 21, 1917, aged 27 years. He was educated at the Royal Grammar School, Guildford, where he gained two scholarships, and then went to the City and Guilds Technical College, Finsbury, as student in the department of Technical Chemistry, where he remained for three years. On leaving college he went as assistant in the chemical laboratory at the Royal Veterinary College, where he remained to the time of his death. In 1916 he gained the Associateship of the Institute of Chemistry. He was an earnest botanical student and a keen observer. I owe to him and Mr Kennedy specimens of an *Orobanche* which may be *O. reticulata*. One of his last bits of work was to send a gathering of plants which he had not strength left to pack without assistance, for he had valvular heart affection after acute rheumatism. His untimely death robbed us of a scientific worker and an affectionate friend, and his widowed mother of her only child.

GREEN, CHARLES BAYLIS, passed his life on the staff of the railway Clearing House, Euston. He occupied his spare time in the cultivation of some of the attractive varieties of British ferns, working for some years in close association with the late C. T. Druery, who gave Green's name as the authority for a plumose sub-variety of *Polystichum aculeatum*. In 1902 his interest in general field botany was excited on becoming a member of the Acton Natural History Society, and from its Middlesex district he made many records and photographs of important plants. His capabilities as a collector were much enlarged when he retired on pension in 1910 to live at Swanage. He proved an energetic and thorough worker, searching all parts in and around the Isle of Purbeck. His quick eyesight and painstaking habits resulted in the recording of new localities for most plants known there, as well as the addition of a number of rarities. The Bournemouth Natural Science Society benefits by receiving his local erbarium with excellent photographs and lantern slides, that should dd much to the knowledge of future investigators. He died at Swanage on October 6, 1918, and was laid to rest in the cemetery here. I. M. ROPER.

In 1917 Mr Green sent a very large number of Dorset notes, many of which appear in our *Report*. One of his plants from Muddiford, Hants, I named as a new var. of *Geranium pusillum*. He also directed me to the locality at Bindon, where he said he discovered *Potamogeton upsaliensis*. See *Rep. B.E.C.* 131, 1917. Field botany loses an ardent worker by his death.

GREGORY, REGINALD PHILIP, born at Trowbridge, Wilts, June 7, 1879, died of pneumonia following influenza at Cambridge, November 24, 1918. Educated at his mother's preparatory school at Weston-super-Mare, he entered St John's College, Cambridge in 1898 and in 1904 obtained a fellowship at his college. In 1915 he became a Captain in the cadet corps, and eventually became a second-lieutenant in 1/6th Gloucestershire Regiment, but was gassed after about a fortnight's service at the front. Doubtless this led to his succumbing to the lung mischief this year. Mr Gregory was the son of our old member, Mrs Gregory, our authority on Violets, to whom we offer our deepest sympathy. His interest in Botany need not therefore be wondered at. He took up a line of research in the Primulas, the highly important results of which were published in the *Journal of Genetics* for 1911, and in a paper in the *Proceedings of the Royal Society* for 1914. See memoir by A. C. Seward in *Nature* 248, 1918.

HUNNYBUN, EDWARD WALTER, born November 20, 1848, died July 3, 1918. He was the son of Martin Hunnybun, a solicitor at Huntingdon, and was educated at Norwich Grammar School under Dr Augustus Jessopp, the delightful writer on East Anglian history. He was then articled to his father, passing his final law examination in 1872. He had a place in the second honours list and was awarded the Clements Inn Prize. He went into practice with his father until the death of the latter in 1883, when he continued with his brother, Mr Gerald Hunnybun. In 1876 he married Alice, the second daughter of W. E. Chapman, of Horbling, Lincolnshire. For nearly 40 years he was clerk to the Huntingdon Board of Guardians, an office he filled with great satisfaction to the members of that body. Asthmatic attacks, however, led him in 1913 to relinquish his practice and he tried many places in an effort to ward off the frequent and troublesome attacks of that trying disease. Eventually he settled at Ventnor, but in the summer of this year a cerebral seizure laid him low from the effects of which he never rallied. He died on July 3, and was buried at Ventnor Cemetery. (See *Huntingdonshire Post*, July 12, 1918.). From very early days Mr Hunnybun was fond of sketching, and he gradually fixed upon the idea of making a complete set of pencil drawings of British plants. These are now being utilised in the *Cambridge Flora*. At Huntingdon he grew many interesting British species. In Wood Walton Fen he discovered in 1907 *Juncoides* (*Luzula*) *pallescens* which he distributed throughout the Club, of which for many years he was a valued member. The following year he conducted me to the place where it grew. This Fen has recently been given to the Society for the Preservation of Natural Areas by the Hon. N. Charles Rothschild. More recently our member, Lady Davy, found the same species in her grounds at Pyrford, where of course it may be of adventitious origin. (See *Rep. B.E.C.* ii., 312, 338, 521.). In the *Cambridge Flora* Dr Moss named a variety of the glabrous Elm after him as *Ulmus nitens* var. *hunnybuni*. On the occasion of our visit to Wood Walton we discovered a hybrid of *Galium verum* with *erectum*, independently found at Malvern Wells by our member, Mr Towndrow and Mr Rendall. Mr Hunnybun was of singularly acute mind, with a natural gift for drawing which he practised with unwearying assiduity, utilising the early hours of the morning, which he found most suitable for the work.

MARQUAND, ERNEST DAVID, born at La Brigade, Guernsey, February 8, 1848, died at Totnes, Devon, February 16, 1918. He was descended from an old Norman family which settled in Guernsey in the twelfth century, his parents being David and Margaret Marquand, who early in the fifties went to settle in New York. He was educated at one of the large public schools in that city, and on returning to England after his father's death received a legal training with the view of entering that profession. For several years he held an appointment as Confidential Secretary to a leading firm of London solicitors. Always a passionate lover of the country and a born naturalist, he gave up city life in 1876 and went with his mother and brother to reside at Brockenhurst, where he spent three or four years studying the fauna and flora of that charming region. It was during that time he compiled the list of the New Forest Phaneragams which was afterwards embodied in Townsend's *Flora of Hampshire*. In 1879 he moved to Penzance, where for several happy years he enjoyed the intimate friendship of the two famous Cornish botanists, John Ralfs and William Curnow. For several years he was Hon. Secretary of the Penzance Natural History Society, to whose *Transactions* he contributed many papers on local Entomology. From Penzance the family migrated to Alphington, in Devon, where his mother died and the household was broken up. Subsequently he and his brother spent a twelvemonths travelling through Germany, Austria and Switzerland. In the autumn of 1888 he settled down in Guernsey. Very little was known at that time about the botany of Guernsey and the adjacent islands, so a fine field of investigation was open, and seven years of steady labour resulted ultimately in the publication in 1901 of the *Flora of Guernsey and the Lesser Channel Islands*. This volume is an extremely valuable addition to the list of Floras, and has many special points of interest. Among these may be mentioned the inclusion of patois names, the notes of local variation, the catalogues of Mosses, Lichens, Fungi, &c., and the plant lists of the smaller islands, each of which has its peculiar problems. In 1896 Mr Marquand married Miss G. E. Boley, daughter of J. Baker Boley, M.D., of Ealing, and they went to reside at Richmond, in Surrey. There for some time he worked at Kew Herbarium, and later at the Linnean Society. In 1899, with their infant son, Mr and Mrs Marquand went to live in the little island of Alderney, and subsequently in Guernsey. There in 1906 I made his personal acquaintance, and together we saw almost all the Guernsey plants. He was a delightful companion, as he knew not only the plants but insects and spiders as well as birds. His bright, cheery face, his trick of humming tunes as he walked, his eyes ever on the alert, come before me as I write. His happy home life, his devotion to his boy, who from his youngest years had his father's taste for the life outdoors, his genial references to his botanical confreres, his pertinent suggestions as to plant occurrences marked him out from the crowd. In later years he came to reside in Oxford, where he gave assistance at the Oxford Herbarium, but our murky skies were not agreeable to him, and one saw he was losing health. On his son's entering Christ's College, Cambridge, he went to reside at Totnes, but his health was broken, and after a period of suffering he succumbed. He was interested in our Society to the last. Mr Marquand was one of the oldest members of the Conchological Society of Great Britain, being elected in 1885. Several contributions from his pen will be found in the *Proceedings*. He was awarded the First Bronze Medal of the Royal Cornwall Polytechnic Society in 1881 for an essay on the Beetles of West Cornwall, and the next year a silver medal for a large and full collection of Cornish Bees. In 1902 Mr Marquand was elected an Associate of the Linnean Society, in December 1904 a corresponding member of the Société des Sciences Naturelles et Mathematiques de Cherbourg, in 1906 a corresponding member of the Société d'Archéologique d'Avranches (in recognition of his essay on the Guernsey Norman Dialect and its Patois Plant Names), and in 1907 a corresponding member of the Cardiff Naturalists' Society. Two species of plants have been named after him—*Salvia Marquandi* Druce and *Verticillium Marquandi* Massee. He was one of the best all-round naturalists of his period. The following is a list of his botanical papers:—Notes on the Flora of Brockenhurst, Hants, in *Science Gossip*, December 1876; *Spiranthes aestivalis* in the New Forest, *l.c.*, June 1878; The New Forest, *l.c.*, May, June and July 1879; List of Plants of the Avon, Lymington and Beaulieu districts, contributed to Townsend's *Flora of Hampshire*, 1883; The Desmids and Diatoms of West Cornwall in the *Transactions of the Penzance Natural Hist. Soc.*, 1883; The Mossists on the Tramp, *l.c.*, 1884; The Freshwater Algae of the Land's End District, *l.c.*, 1886; Dartmoor, *l.c.*, 1887; On the Genus *Isoetes*, in the *Transactions of the Guernsey Soc. Nat. Science*, 1889; The Flora of Herm, *l.c.*, 1889; The Flora of Guernsey compared with that of West Cornwall in the *Transactions of the Penzance Natural Hist. Soc.*, 1890; The Flora of Jethou in the *Transactions of the Guernsey Soc. Nat. Science*, 1890; John Ralfs, the Botanist: a Biographical Memoir in the *Transactions of the Penzance Natural Hist. Soc.*, 1890; The Cryptogamic Flora of Kelvedon (Essex) and Neighbourhood, compiled from the Collections and Notes of the late E. G. Varenne, M.R.C.S., in *Essex Naturalist*, 1891; The Flora of Guernsey (Phanerogams) in the *Transactions of the Guernsey Soc. Nat. Science*, 1891; The Flora of Cornwall, published in I. H. Collins' new edition of the *History of Cornwall*; The Mosses, Hepaticae and Lichens of Guernsey in the

Transactions of the Guernsey Soc. Nat. Science, 1892; The Mosses of Guernsey in the *Journal of Botany*, 1893; Further Records for the Scilly Isles, *l.c.*, 1893; The Botany of Cornwall in Deacon's *Devon and Cornwall Court Guide and County Blue Book*, London, 1896; The Diatoms of Guernsey in the *Transactions of the Guernsey Soc. Nat. Science*, 1893; The Algae of Guernsey, *l.c.*, 1894; Wild Flowers in December, *l.c.*, 1895; Fresh-water Algae: their Structure, Distribution and Relationship in *Essex Naturalist*, 1897; The Fungi of Guernsey (two papers) in the *Transactions of the Guernsey Soc. Nat. Science*, 1897 and 1898; The Flora of Alderney, *l.c.*, 1899; The Botany of Guernsey: a Chapter in Miss Robin's *Guide to the Channel Islands*, 1902; Additions to the Flora of Alderney in the *Transactions of the Guernsey Soc. Nat. Science*, 1902; Annual Report of the Botanical Section of the Guernsey Soc. Nat. Science, 1903; The Mosses and Hepaticae of Sark in the *Transactions of the Guernsey Soc. Nat. Science*, 1903; Further Additions to the Flora of Alderney *l.c.*, 1903; Annual Report of the Botanical Section of the Guernsey Soc. Nat. Science, 1904; Additions to the Flora of Herm in the *Transactions of the Guernsey Soc. Nat. Science*, 1904; Synopsis of the Fauna and Flora of the Sarnian Islands, *l.c.*, 1904; Botanical Rambles in Guernsey in the *Journal of Botany*, July 1905; Annual Report of the Botanical Section of the Guernsey Soc. Nat. Science, in the *Transactions of the Guernsey Soc. Nat. Science*, 1905; The Guernsey Dialect and its Plant Names, *l.c.*, 1905; Annual Botanical Report, *l.c.*, 1906; The Mosses and Hepaticae of Jethou, *l.c.*, 1906; Annual Botanical Report, *l.c.*, 1907; Primrose Flowers: a Study of Pin-centres and Rose-centres, *l.c.*, 1907; Wild Flowers and Ferns of Sark in Toplis and Oxenham's *Book of Sark*, 1908; Annual Report of the Botanical Section of the Guernsey Soc. Nat. Science, 1908; Botanical Notes, *l.c.*, 1908; The Vegetation of Small Islets, *l.c.*, 1909; Rambles in Sark in Search of Flowers, *l.c.*, 1910. He wrote twenty-nine other papers on various scientific subjects.

MARTYN, Rev. T. W., M.A. He was educated at Magdalen College, Oxford, and took Orders. He was assistant curate of St Nicholas, Plumstead, 1874-76, of Stoke d'Abernon, 1876-79, of Buckingham, 1879-81, and Rector of Hethe, Oxon, 1881-87, and of Stoke Abbots, Bucks, 1887-1918. While at Buckingham Mr Martyn made some notes on the Flora of the district, and at Hethe he sent some Oxfordshire records which are incorporated in the *Flora of Oxfordshire*. His few Buckinghamshire notes are inserted in my MS. of the Flora which still awaits publication. One of the most interesting of his discoveries was *Narthecium* in a marl-pit at Aston Clinton. Mr Martyn, who had been ailing in the spring, died suddently on the railway platform at Oxford in 1918.

MILLER, WILLIAM FREDERICK, born at Edinburgh, September 18, 1831, died at Winscombe, Somerset, April 28, 1918. He added *Carex Buxbaumii* to the Scottish Flora from Arisaig, Westerness. See *Journ. Bot.* 345, 1895.

MITCHINSON, The Right Rev. Bishop JOHN, D.D., D.C.L., born at Durham, September 23, 1833, the posthumous son of John Mitchinson, a chaplain in the Merchant Service, died suddenly of angina at Gloucester Cathedral Gardens, September 25, 1918. Dr Mitchinson was educated at Durham School and entered Pembroke College, where he gained a scholarship. His brilliant Oxford career included first class in Moderations and a double-first in Classics and Natural Science. A youth of quick intelligence, charming manners, with a clear and delightful style of speaking, he was elected President of the Union, and on leaving Oxford embarked on a most successful educational career, acting first as assistant in 1857 at the Merchant Taylors' School, where he was ordained Deacon in 1858. In 1859, at the early age of 26, he became headmaster of the King's School at Canterbury. There he was extremely popular, as his natural kindness endeared him to sucessive relays of boys during his fourteen years' occupancy of that office. An instance of this kindness became known to me at a public dinner when seated next to him. There was a well-known headmaster of a public school present who referred to the pleasure he had in seeing Dr Mitchinson there. He said that when Dr Mitchinson was examining some schools near Canterbury the paper sent in by one of the boys struck him as of unusual merit. He therefore went to the town where the boy lived and learned that he was the son of a tradesman and destined for a business career. The Master, however, suggested that if he came to Canterbury he would forego all fees, and that he believed a successful professional future lay before him. The offer was however declined, and somewhat disappointed the Master returned home. In the course of a few months the Master was approached, the boy came to Canterbury, and under the skilful and watchful tuition proved an excellent scholar, gaining a scholarship at a well-known Oxford College of which eventually he became Fellow and subsequently a prominent Public-school headmaster, the guest at the dinner that night. Dr Mitchinson was made Hon. Canon of Canterbury, and he filled the office of Select Preacher at Oxford in 1872, 1892, and 1903. In 1873 he succeeded Dr Parry as Bishop of Barbados and the Windward Islands, but the climate did not suit him, and it is probable that he found Barbados too small and too limited in geological interest for his activities and taste. But he brought back many pleasant reminiscences of his residence in the shape of shells and ferns, many given him by grateful people, both white and coloured, and he added greatly to his list of kindly friendships and sunny memories. On his return to England he acted as Assistant Bishop in the See of Peterborough and Archdeacon of Leicester and Rector of Sibstone in that diocese from 1881 to 1900 under that matchless pulpit orator, Dr Magee. In February 1899, on the death of Dr Bartholemew Price, he was elected Master of Pembroke College, which carries with it a Canonry of Gloucester. There his office was by no means without difficulty, but his calm judgment and kindly tact stood him in good stead. He was selected by the Hebdomadal Council to represent the University on the City Council, where his services were much appreciated, and to me he was a beloved colleague. He also was a governor of the Oxford High School. From his early years he had been fond of Natural Science, Botany, Conchology, Geology and Entomology being his favourite subjects. He made collections of each branch. He was an excellent photographer, beginning when wet plates were the order of the day, but he made this branch of science subservient to his most favoured subject which was to prepare a history of the monastic buildings of Britain. For this purpose he visited any remains of importance and his photographs and historic details were mounted up in huge volumes with all that neatness and laborious accuracy which were characteristic of the man. This, his *magnum opus*, he presented some time ago to the Bodleian Library. About that time he paid me the compliment of consulting me as to the destination of his collections, presenting me with the three cabinets containing his herbarium, which was well mounted, accurately named, and culled from very many places in the British Isles. It contained two plants of especial interest, one an addition to the Irish flora, *Arctostaphylos alpina*, which he had gathered in Donegal in 1865 (*Rep. B.E.C.* 494, 1916) but was unaware that it was a new Irish specimen. On my going to inquire if he remembered the circumstance of gathering it, he consulted his diary, where we found the note, "July 14, 1865. Returned by Gweedore by car, gathering *A. alpina* on the way past Kilmacrenan to Letterkenny." The second plant was *Lilium pyrenaicum*, which he found between Haverfordwest and St David's, an addition to the Welsh flora. One may add that his copy of Sowerby was given to one of our members "where he knew it would be well housed," and that he wished me to have his copy of Moore's *Nature Printed Ferns* which had been given him by a grateful pupil. He had many such for he loved teaching the young. In *Who's Who* "teaching" is given as one of his hobbies. He always had two or three boys staying with him in vacation, when they were taught many things which would fit them for their struggle with the world. Space does not permit one to do justice to this side of the Bishop's life. There has been given to us drawn by that master limner of Rembrandtish effects, in *Les Misérables*, the picture of the Roman Catholic Bishop Myriel. In the memory of many a man still living there is a not less beautiful and kindly image graven in ineffaceable lines representing Bishop Mitchinson. For the past five or six years he had attacks of angina, but he was extremely brave. He was to the last as keen as ever about plants. When our late member, Mrs Foord Kelcey, found *Daphne Mezereum* on the Bucks Chilterns he was delighted to go with me to see it, and that day he added to his pleasure by gathering *Asarum* in the same county. Almost the last occasion I called on him, was to show him the beautiful *Ajuga genevensis* just added to the British flora by Miss Fry from Berkshire. This delighted him not a little. He then told me he had taken three services the preceding Sunday, and incidentally mentioned that he had preached in every cathedral in England. No dread of death worried him as he said he had lived a lengthy life, packed with pleasures. He had fought a good fight; there were the happiest memories of multitudinous kindnesses to many people to lighten and to comfort him; he had no relations dependent on him or for whom he had to provide, so that he had always given with an open hand during his life-time, and his legacies could necessarily be small. The world, which has lost so much of what is best and bravest during the last four years, is immeasurably the poorer from the loss of such an exemplar of all that was highest and noblest in thought, word and deed as the late Master of Pembroke.

SARGANT, ETHEL, F.L.S., born at 45 Regent's Park, London, October 28, 1863, died January 16, 1918. The death of Ethel Sargant (aet. 54), Honorary Fellow of Girton College, brings to memory not only the thoroughness and accuracy of her work and her vigorous and logical mind, but also Dr D. H. Scott's remark that she "was one of the few women who would undoubtedly have been elected a fellow of the Royal Society had the charter permitted." In 1892 she entered the Jodrell Laboratory at Kew, and shortly after published in conjunction with Dr Scott, a paper on *Discidia rafflesiana*, a plant whose pitchers serve simply to collect water and soil and not to catch insects. But her principal work while at Kew was the investigation of the details of the process of nuclear division. This work, which she began at Kew, she continued in her own well-equipped laboratory at home. In 1899 Miss Sargant confirmed in a communication to the Royal Society the discovery of Navaschin, that fertilisation in the higher flowering plants is double, the endosperm as well as the embryo being the product of a sexual union of nuclei. *Pari passu*, with her later work on nuclear division, Miss Sargant took up with enthusiasm the study of the comparative anatomy of seedlings. and finally devoted her whole time to this investigation. Her research led her to put forward a new theory as to the origin of Monocotyledons. She held that Monocotyledons had been evolved as an early off-shoot from an ancient simple Dicotyledonous stock. Prof. G. Henslow previously had held that the Dicotyledons were the more primitive group of the two, but while he had derived the Monocotyledons from aquatic plants, Miss Sargant derived them from geophilous ancestors. The single cotyledon was interpreted by her as a fusion of the two seed-leaves of a Dicotyledon. Bearing on this subject, her paper : " Reconstruction of a Race of Primitive Angiosperms " (1908) is of special interest on account of its originality and of the soundness of the reasoning. Col. Sir David Prain and Miss Sargant were freshmen on the Council of the Linnean Society on the very same day—elected at the same meeting. Miss Sargant was the first woman to preside at a section of the British Association. It was at the Birmingham meeting in 1913 that she was President of the Botanical Section when her address, "A Critical Essay on Plant Embryology," showed the judicial quality of her mind. BEATRICE TAYLOR.

NEW COUNTY AND OTHER RECORDS.

ABBREVIATIONS.—*Fern Gaz.* = *The British Fern Gazeette*, edited by F. W. Stansfield; *Gard. Chron.* = *The Gardeners' Chronicle*; *Hiern Rep.* = *Devon Assoc. Science, &c., Report*; *Ir. Nat.* = *The Irish Naturalist*; *Nat.* = *The Naturalist*; *Ridge Rep.* = *Report of Staffordshire Field Club*; *Wats. B.E.C.* = *Report of Watson Botanical Exchange Club*; Woodhall Spa = Plants gathered by the Rev. F. Alston at Tower o' the Moor Fowl-farm, N. Lincoln; † = Adventive; * = New County Record (in the case of adventive plants this is only rarely added); ! placed after a plant signifies that the compiler has seen a specimen; ! placed after a locality that the compiler has seen it there; × placed between two scientific names means that the plant is a hybrid; 52, &c., numbers following a county, refer to the Watsonian vice-county in Topographical Botany; [ ] enclosing a record mean that confirmatory evidence is needed.

*9. ANEMONE NEMOROSA L., var. CAERULEA DC. Birdlip, W. Gloster, Miss BUTLER.

†10. A. RANUNCULOIDES L. Ovington, W. Norfolk, ROBINSON.

†11. A APENNINA L. Compton Wood, Berks, Miss FRY.

20. RANUNCULUS ACRIS L. A form of this with dark chocolate blotches on the base of the leaf-segments occurred at Early, Berks, DRUCE. Var. NATHORSTII (Berl.). Cliffs of Lochnagar, S. Aberdeen, 1918, DRUCE.

36. R. FLUITANS Lam. Newton St Loe, N. Somerset, I. M. ROPER in *Wats. B.E.C.* 50, 1917. Claimed as a N.C.R. but it is given by Watson in *Top. Bot.* on the authority of Thwaites. Near Druce, Dorset, 1917, DRUCE.

38. R. TRICHOPHYLLUS Chaix. Kenfig Pool, Glamorgan, WEBB.

40. R. HETEROPHYLLUS Web. Arnside, Westmorland, 1890; St Anne's, West Lancs, 1903, BAILEY.

41. R. FLORIBUNDUS Bab. Sidlesham, W. Sussex; Fostersbooth, Northants, DRUCE.

*41 (2). R. SPHAEROSPERMOS Boiss. & Blanche. Peaty drain, Rusland Moss, N. Lancs, 69b, PEARSALL.

43. R. TRIPARTITUS DC. Hennock, S. Devon, *Hiern Rep.*

47. R. FICARIA L., var. SINUATUS Horw. Swanage, Dorset. DRUCE.

49. CALTHA RADICANS Forst. Scotton, N. Lincs, WOODRUFFE-PEACOCK.

51. HELLEBORUS VIRIDIS L., var. OCCIDENTALIS Druce. Oxwich Bay, Glamorgan, Mrs BIGGS, ex WEBB.

†53. CAMMARUM HIEMALE Greene. Attleborough, W. Norfolk, REYNOLDS.

†60. DELPHINIUM AJACIS L. Slough, Bucks, 1917, DRUCE; Galashiels, Selkirk, I. M. HAYWARD.

*77. CASTALIA ALBA Wood, var. OCCIDENTALIS Ostenf. Arisaig, Westerness, DRUCE.

†79. PAPAVER SOMNIFERUM L. Kenfig sands, &c., Glamorgan, WEBB.

80. P. RHOEAS L., var. STRIGOSUM Boenn. Brixham, S. Devon, M. COBBE; Staffs, *Ridge Rep.*

80. P. RHOEAS × DUBIUM. Brixham, S. Devon; Pyrford Surrey, M. COBBE.

†87. ARGEMONE MEXICANA L. Bradford, York, CRYER.

106. FUMARIA PURPUREA Pugsl. Tintern, Monmouth, Miss TODD.

107. F. BORAEI Jord., var. BRITANNICA Pugsl. Keswick, Cumberland, 1918, DRUCE.

108. F. MURALIS Sond., var. DECIPIENS Pugsl. Frating, Essex, Miss TODD, with some reservation, Pugsley. [Staffs., *Ridge Rep.* 110, 1917].

109. F. BASTARDII Bor. Belfast, Co. Down, KENNEDY.

*113. F. VAILLANTII Lois. Stow Bardolph Hall, W. Norfolk, LITTLE in *Rep. B.E.C.* 208, 1917; * Staffs, *Ridge Rep.* 1917.

†118. MATHIOLA TRISTIS Br. Ventnor, Isle of Wight, 1918, REDGRAVE.

122. RADICULA NASTURTIUM Druce, var. SIIFOLIA Druce. Mayals, Glamorgan, WEBB.

124. R. SYLVESTRIS Druce. Carmarthen, HAMER, no pers. auth. in *Top. Bot.* ed. 2, p. 45.

*129. BARBAREA VULGARIS Aiton f. Barmouth, Merioneth, 1918, TOWNDROW. This completes the English counties.

*130. B. ARCUATA Reichb. Stansteadbury, Herts, DRUCE.

†131. B. INTERMEDIA Bor. Dundee, Forfar, 1916, DRUCE.

133. ARABIS HIRSUTA Aiton f., var. GLABRATA Syme. Friday Church Down, W. Sussex, BURDON.

†137. A ALBIDA Stev. Merthyr Mawr Quarry, Glamorgan quite naturalised, WEBB.

†138. A. ALPINA L. Welbeck, Notts, hortal, GOULDING.

142. CARDAMINE PRATENSIS L., var. PALUSTRIS W. & G., f. ALBA. Loddon Bridge, Berks, DRUCE.

†*155. ALYSSUM ALYSSOIDES L. Pitlochry, E. Perth, 1877, Dr THOMAS THOMSON.

†157. A. INCANUM L. Pyrford, Surrey; Bedminster, Bristol, N. Somerset, M. COBBE; Welbeck, Notts, GOULDING.

†158. A MARITIMUM Lam. Barmouth, Merioneth, TOWNDROW.

162. DRABA MURALIS L. Manifold Valley, Staffs (only one previous record), BOYDON in *Ridge Rep.*

†177. WILCKIA MARITIMA Scop. (MALCOMIA). Cadney, N. Lincs WOODRUFFE-PEACOCK.

†184. SISYMBRIUM ALTISSIMUM L. Railway near Castle Hill, S. Devon, COUNTESS FORTESCUE; Moulsford, Berks, Miss NEILD; Charterhouse, Surrey, LATTER; Barmouth, Merioneth, TOWNDROW; covering four acres of the Stour Valley Furnace Works ash debris at Kidderminster, Worcestershire, CARLETON REA.

†185. S. ORIENTALE L. Castle Hill, Devon, with above, COUNTESS FORTESCUE; Charterhouse, Surrey, LATTER.

‡188. S. IRIO L. Hull Docks, York, 1904, WATERFALL.

†200. CONRINGIA ORIENTALIS Dum. Castle Hill, Devon, COUNTESS FORTESCUE; Potterne, Wilts, GWATKIN; Welbeck, Notts, GOULDING.

†202 CAMELINA SATIVA Cr. Castle Hill, Devon, COUNTESS FORTESCUE; Tweedside, Selkirk, I. M. HAYWARD; Melmerby, Cumberland, MASON.

†208. BRASSICA RAPA L., var. BRIGGSII Wats. Barmouth, Merioneth, TOWNDROW.

†212. B. ELONGATA Ehrh. Dewsbury, York, HALEY. Var. PERSICA (Pers.). Bedminster, Bristol, N. Somerset, M. COBBE.

†218. B. JUNCEA Coss. Chilworth, S. Hants, RAYNER; Marston, Oxford, DRUCE; Welbeck, Notts, GOULDING.

†224. B. ERUCASTRUM L. Beeston, York, 1916, PULLAN.

†228. ERUCA SATIVA Mill. Marston, Oxford, DRUCE.

232. BURSA PASTORIS Web., var. STENOCARPA-LYRATA (Mott). Dalton-in-Furness, N. Lancs, PEARSALL.

†237. LEPIDIUM DRABA L. Barmouth, Merioneth, TOWNDROW.

†239. L. PERFOLIATUM L. Castle Hill, Devon, COUNTESS FORTESCUE; Lyndhurst, S. Hants, Miss TODD; Croft Castle, Hereford, Mrs ATHERLEY; Welbeck, Notts, GOULDING.

†240. L. RUDERALE L. Barmouth, Merioneth, TOWNDROW.

†247. L. BONARIENSE L. Wrentham, Pye Hall Farm, Suffolk, 1917, HORWOOD.

†247. L. DENSIFLORUM Schrad. Watton, W. Norfolk, ROBINSON.

†247. L. VIRGINICUM L. Bedminster, Bristol, N. Somerset, M. COBBE; Torquay, S. Devon, 1909, C. E. LARTER.

†258. VOGELIA PANICULATA Horn. Wellington College, Berks. DRUCE; Rock Ferry, Cheshire, Dr F. A. LEES, ex TRAVIS.

†260. MYAGRUM PERFOLIATUM L. Abingdon, Berks, GAMBIER-PARRY.

†262. BUNIAS ERUCAGO L. Woodhall Spa, ALSTON.

†267. RAPISTRUM ORIENTALE DC. Sandal, York, HORRELL.

†268. R. RUGOSUM All. Abingdon, Berks, DRUCE and GAMBIER-PARRY; Carmarthen, HAMER. In the greatest abundance for

a quarter of a mile on a bank near Burpham, W. Sussex, shown to me by Prebendary Burdon 1918, completely naturalised, not quite typical, verging towards 269, DRUCE.

†269. R. LINNAEANUM B. & R. Abingdon, Berks, DRUCE and GAMBIER-PARRY.

287. HELIANTHEMUM BREWERI Planch. Lady Verney tells me she has found this in another locality about three miles from the "locus classicus" in Anglesey.

*293. VIOLA SYLVESTRIS Kit. Staffs, *Ridge Rep.*

296. V. CANINA × RIVINIANA. Stokeinteignhead, S. Devon, 1916, C. E. LARTER. Var. LANCEOLATA Martr.-Don. Dunsford, S. Devon, 1914, C. E. LARTER.

297. V. LACTEA Sm. The earliest evidence for Dorset seems to be a specimen found about 1840 near Poole, by Dr N. TYACKE.

298. V. DUMETORUM Jord. Birdlip, W. Gloster, Miss BUTLER.

299. V. HIRTA L., var. HIRSUTA Lange, f. LUTEO-CANESCENS Greg. St Mary Church, S. Devon, C. E. LARTER. Drawn by E. W. HUNNYBUN. Var. PINETORUM Wiesb. Brixham, S. Devon, 1917, C. E. LARTER.

301. V. EU-PALUSTRIS L. Methuen, M. Perth; Mallaig, Westerness, DRUCE. No *epipsila* seen although the locality seemed eminently suitable.

†302. V. CORNUTA L. Large clump on road-side at Alvah, Banff; Grantown, Easterness, well naturalised, A. E. MAHOOD, in *lit.*

303. V. LEJEUNEI Jord. Low Wood, Haverthwaite, N. Lancs, 69b, PEARSALL.

303. V. LEPIDA Jord. Lampeter, Monmouth, RIDDELSDELL in *Rep. B.E.C.* 211, 1917; Matlock, Derby, 1852, A. DIXON. Seems first record.

304. V. Lloydii Jord. Llandaff, Glamorgan, Riddelsdell, *l.c.*

*308. Polygala serpyllacea Weihe, var. vincoides Chodat. Bracknell, Berks, Druce.

310. P. oxyptera Reichb. auct. ang. Cabrach, N. Aberdeen, Druce.

*318. Dianthus deltoides L. Golf Course, Woodhall Spa, N. Lincs, Alston.

†324. D. Caryophyllus L. Hortal. Shingle, Ballater, S. Aberdeen, with *Lupinus nootkatensis*, Druce and Mrs Wedgwood.

†325 (2). Tunica Saxifraga Scop. Still at Tenby, 1918, Arnett. Quite naturalised. See *Rep. B.E.C.* 440, 1909.

†328. Gypsophila paniculata L. Near Bury St Edmunds, Suffolk, 1918, J. Rasor.

†331. Saponaria Vaccaria L. Croft Castle, Hereford, 1918, Mrs Atherley.

342. Silene gallica L. Clover field, Trimingham, Norfolk. *S quinquevulnera* L. was in an adjacent field, Horwood.

†344. S. quinquevulnera L. Cultivated field, Finchampstead, Berks, 1918, King.

†350. S. Muscipula L. Ovenden, York, Horrell; Boiling Well Tip, Bristol, 1918, Mrs Wedgwood.

354. S. dubia Herbich. Gravelly bank near the Thames, Surrey, Britton, vide sp.; Donbridge, Jersey, 1907, Druce.

370. Cerastium vulgatum L., var. holosteoides Wahl. Thames above Richmond, Surrey, 1916, Britton. Just the Tay-side plant.

372. C. pumilum Curt. Berry Head, S. Devon, 1918, Druce.

377. Stellaria aquatica Scop. On the banks of the Team, Durham, Heslop-Harrison.

*382. S. Dilleniana Moench. North Stoke, &c., W. Sussex, Druce and Burdon; Stow Bedon, W. Norfolk, Druce and Robinson. In each instance with var. *palustris*.

†387. Arenaria balearica L. On a wall at Whitchurch, Oxfordshire. Hortal. Stansfield.

396. A. verna L. On serpentine near Buck of Cabrach, N. Aberdeen, 1918, Druce and Mrs Wedgwood, as a form approaching *Gerardi*, if not a distinct variety.

406. Sagina apetala Ard. Ballater, S. Aberdeen, 1918. Druce; Furness Abbey [Ref. No. 57], N. Lancs, Pearsall.

407. S. maritima Don. Furness, L. Lancs, 1917, Lumb and Pearsall.

409. Spergula arvensis L. Blackpill, Glamorgan, Webb.

412. Spergularia media Presl, var. glandulosa Druce. Blythburgh, E. Suffolk, Horwood.

414. S. atheniensis Heldr. & Sart. Charlestown, near St Austell, Cornwall, Tresidder.

415. S. rubra Presl. Luxuriant plants on clinkers, Grovesend Station, Glamorgan, Webb.

421. Montia fontana L. (lamprosperma), var. boreo-rivularis Druce. Near the Buck of Cabrach, N. Aberdeen; Arisaig, Westerness, Druce and Mrs Wedgwood.

435. Hypericum quadrangulum L., var. erosum Schinz, f. punctatum Schinz. Callander, W. Perth, 1918, Druce.

436. H. perforatum L., var. angustifolium DC., sub-var. lineolatum R. & F. Molesey Hurst, 1917, Britton.

†443. ALTHAEA HIRSUTA L. Swaythling, S. Hants, 1918. RAYNER.

†447. LAVATERA THURINGIACA L. and †448. L. PUNCTATA All. Swaythling, S. Hants, 1918, RAYNER.

452. MALVA SYLVESTRIS L., var. LASIOCARPA Druce. Malvern Wells, Worcester, TOWNDROW. Var. ANGUSTILOBA Celak. Bodorgan, Anglesey, 1917, DRUCE.

†454. M. PUSILLA With. Swaythling, S. Hants, RAYNER; Shapwick, N. Somerset, Miss TODD; Wellington College, Abingdon, Berks, DRUCE.

[469. LINUM PERENNE L. Staffs, *Ridge Rep.* 1917.]

†483 (3). GERANIUM DIVARICATUM Ehrh. Near Exeter, S. Devon, M. COBBE.

490. ERODIUM LACINIATUM Willd. and 494. E. MOSCHATUM Ait. Stubble field, Byfleet, Surrey, M. COBBE.

497. E. PIMPINELLIFOLIUM Sibth. Near Newchurch, Isle of Wight, REDGRAVE; in great abundance in sandy field near Byfleet, Surrey, ! M. COBBE.

504. OXALIS ACETOSELLA L., var. SUBPURPURASCENS DC. Melmerby, Cumberland, MASON.

†506. O. STRICTA L. Pyrford, Surrey, A. B. COBBE.

†513. IMPATIENS GLANDULIFERA Royle. Quite naturalised on banks of the Tawe, Ponardawe, Glamorgan, 1914, LLEWELLYN; by the Usk, Brecon, 1918, BROTHERS; Fairborne, Merioneth, TOWNDROW.

526. ACER CAMPESTRE L., f. DISSECTIFOLIUM Melv. [Ref. No. 1930]. Hook, Surrey, 1918, BRITTEN.

*539. ULEX MINOR Roth. Ben Alisky, 800 feet, Caithness, LITTLE, ex A. BENNETT in *Trans. Bot. Soc. Edin.* 135, 1917. The most northern locality in Europe.

541. ONONIS RECLINATA L. Flowering in two stations, Berry Head (!), S. Devon, 1918, Misses COBBE.

†562. MEDICAGO FALCATA L. Whitby, York, JOHNSON. Var. TENUIFOLIOLATA Vuych. Bedminster, Bristol, N. Somerset, M. COBBE.

†564 (2). M. VARIA Martyn. Dean Clough, Halifax, York, HORRELL; Woodhall Spa, ALSTON.

†567. M. SCUTELLATA Mill. Byfleet, Surrey, 1918, M. COBBE.

†571. M. TRIBULOIDES Desr. Meanwood, Leeds, 1916, PULLAN. Det. W. B. TURRILL.

†572. M. TRUNCATULA Gaertn. Meanwood, Mirfield, York. HORRELL.

†573. M. LITTORALIS Rhode. Kirkstall, York, HORRELL.

†574. M. TUBERCULATA Willd. Mirfield, York, HORRELL.

†581. M. MINIMA Desr. Found by Misses COBBE in great quantity in a sandy field at Byfleet, Surrey, with other aliens, introduced with shoddy-wool containing foreign seeds. With it also the var. RECTA Burnat (LONGISETA); the latter also at Twerton, N. Somerset, T. H. GREEN.

†584. M. CILIARIS Willd. Bradford, York, 1918, CRYER; Leith, Midlothian, 1906, FRASER.

†595. MELILOTUS ALBA Desr. Swaythling, S. Hants, with *M. arvensis*, RAYNER; Barmouth, Merioneth, TOWNDROW.

†597. M. INDICA All. Chiselhurst, Kent, ALLEN; Staffs, *Ridge Rep.*

598. TRIFOLIUM MEDIUM Huds. A small form with the facies of *pratense*. Gimingham, W. Norfolk, HORWOOD.

†602. T. OCHROLEUCON Huds. Port Clarence, Durham, HESLOP-HARRISON; Turvey, Beds, MASON.

†605. T. LAPPACEUM L. Near Byfleet, Surrey, M. COBBE.

†606. T. ANGUSTIFOLIUM L. Ashton Gate, Bristol, A. B. COBBE; Dewsbury, York, HALEY.

†608. T. INCARNATUM L. Quite naturalised on turf of Pairland Cliffs, near Port Eynon, Glamorgan, WEBB.

†625. T. SPUMOSUM L. Byfleet, Surrey, A. B. COBBE.

†630. T. NIGRESCENS Viv. Near Byfleet, Surrey, M. COBBE.

633. T. SUFFOCATUM L. Rhossilly, Glamorgan, 1910, E. M. WAKEFIELD.

†634. T. PATENS Schreber. Welbeck, Notts, GOULDING.

†635. T. AGRARIUM L. Byfleet, Surrey, M. COBBE.

638. T. FILIFORME L. Melmerby, Cumberland, MASON.

648. LOTUS CORNICULATUS L., sub-sp. TENUIFOLIUS (L.) Thell. Turvey, Beds, MASON; Bradford, York, CRYER. Var. INCANUS Gray. Wool, Dorset, 1918, DRUCE.

†656. ASTRAGALUS HAMOSUS L. Halifax, York, HORRELL.

†665. SCORPIURUS SUBVILLOSA L. Galashiels, Selkirk, I. M. HAYWARD.

†667. CORONILLA SCORPIOIDES Koch. Byfleet, Surrey, M. COBBE.

†668. ORNITHOPUS COMPRESSUS L. Byfleet, Surrey, with above, in some plenty, M. COBBE; Dean Clough, Halifax, York, HORRELL.

679. VICIA CRACCA L. Mr Robinson's beautiful Vetch from Saham Toney, W. Norfolk, (see *Rep. B.E.C.* 336, 1915). Dr Thellung places between the sub-species *incana* and *tenuifolia*. It is referred to var. *argentea* Coss. & Germ. in the *Report*.

†680 (2). V. BENGHALENSE L. (V. ATROPURPUREA Desf.). Morley, York, 1916, PULLAN. Det. TURRILL.

†683. V. VARIA Host. Byfleet, Surrey, M. COBBE; St Philip's, Bristol, 1918, Miss TODD.

688. V. SEPIUM L., var. OCHROLEUCA Bast. Caterham, Surrey, Hon. Mrs INGILBY.

691. V. LUTEA L. With whitish flowers at Weymouth, Mrs WEDGWOOD. The pods are hairy and the plant is not *laevigata* Sm.

698. V. ANGUSTIFOLIA Reichb. Melmerby, Cumberland, MASON. Var. GARLANDI Druce. Plants closely approaching this grew in a sandy field, Pyrford, Surrey, LADY DAVY and DRUCE.

700. V. LATHYROIDES L. * Cardigan, CLARKE; Halifax, York, HORRELL.

†709. LATHYRUS LATIFOLIUS L. Caswell, Glamorgan, WEBB; Barmouth, Merioneth, TOWNDROW.

†717. L. INCONSPICUUS L. Kirkstall, York, HORRELL.

†718. L. HIRSUTUS L. Par, Cornwall, 1918, WISE, in *lit.*

†726. L. APHACA L. Byfleet, Surrey, M. COBBE; Staffs, *Ridge Rep.*

†739. PRUNUS DOMESTICA L. Mumbles, &c., Glamorgan, WEBB.

†744. SPIRAEA SALICIFOLIA L. Newbottle Spinney, Northants, 1878, S. A. RUSHER.

746. S. ULMARIA L., var. DENUDATA Boenn. Melmerby, Cumberland, MASON.

*748. RUBUS IDAEUS L., var. OBTUSIFOLIUS (Willd.). Stow Bedon, W. Norfolk, 1918, DRUCE and ROBINSON.

850. R. INFECUNDUS Rogers. Stow Bedon, W. Norfolk, DRUCE.

*883. GEUM INTERMEDIUM Ehrh. Staffs, *Ridge Rep.* 1917.

†892. Potentilla recta L. Goring, Oxford, Gambier-Parry; Wyrardisbury, Bucks, Monckton.

†*896 (2). P. intermedia L. Waste ground, Denham, Bucks, Redgrave.

909. Alchemilla minor Huds. Matlock, Derby, 1851, A. Aitkin, an early record; Belfast, Co. Down, Kennedy.

909. A. pratensis Schmidt. Alford, Corgarff, N. Aberdeen; Ballater, S. Aberdeen; Arisaig, Mallaig, Westerness; Callander, W. Perth; Bridge of Allan, Stirling, Druce.

909. A. alpestris Schmidt. Alford, &c., N. Aberdeen; Ballater, S. Aberdeen, Druce; Barmouth, Merioneth, Towndrow.

914. Agrimonia odorata Mill. Staffs, *Ridge Rep.* 1917.

925. Rosa systyla Bast. Abundant about Burpham, Amberley, W. Sussex, 1918, Druce.

926. R. transitoria group. Burpham, W. Sussex; Mongewell, Oxon, 1918, Druce.

927. R. dumalis Bechst. Flint, 1845, Dr Bidwell; Benthall Edge, Staffs, 1842, Dr Bidwell; Upmonden, Sussex, Rev. G. Smith. Var. eriostyla (Rip. & Déség.). Corgarff, N. Aberdeen, 1918, Druce.

928. R. andegavensis Bast., var. agraria (Rip. & Déség.). Bodorgan, Anglesey, 1918, Druce. Var. Rousselii (Rip.), and near this (as *R. caesia*), Hort. Kew, J. Baker.

929. R. verticillata Mérat, var. inconspicua (Déség.). Myton, Warwick, 1864, H. Bromwich, as *verticillacantha*.

932. R. dumetorum Thuill., var. jactata (Déség.). Bodorgan, Anglesey, 1918, Druce. Var. trichoneura (Rip.). Wootton, N. Somerset, Miss Todd. Var. hemitricha (Rip.). Richmond, York, as *arvatica* Baker, J. Ward.

934. R. GLAUCA Vill., var. SUBCANINA Christ. -Bridge of Allan, Stirling, 1918, BARCLAY and DRUCE.

937. R. EGLANTERIA L. Oaken, Staffs !, 1838, Dr BIDWELL.

940. R. BORRERI Woods. Bodorgan, Anglesey, 1918, DRUCE. The *R. Borreri* of Bromwich from Woodloes, Warwick, is an *eglanteria* hybrid.

941. R. FOETIDA Bast., var. CONFUSA (Puget). East Marden, Kent, Rev. G. SMITH in *Hb. Druce.* To this group belongs *R. Jundzilliana* from Tabley, Cheshire, collected by the Hon. J. WARREN, teste WOLLEY-DOD.

Exchange Club Roses, 1917. See *Report* 220-222.

Lieut.-Col. Wolley-Dod's criticisms on the Roses sent in were not available for insertion in the *Report.* They are now appended.

ROSA CANINA L., sub-gr. DUMALIS, var. RECOGNITA Rouy. Miss I. M. Roper. "The fruit is that of *recognita* but not the leaflets. It is really nearer *R. insignis* Déség., and I should place it there provisionally."

ROSA —— ? [1487]. C. E. Britton. "Nearest *sphaerocarpa* Pug. but leaflets almost glabrous beneath bring it near *R. curticola* Pug."

R. BORRERI Woods. [1609]. C. E. Britton. "I should say this has nothing to do with *Borreri* nor with the *tomentella* group. To me the leaflets are glabrous beneath. The petioles are almost, of not quite so, and the pubescence always (?) appears on them first. I place it in the dumales nearest *R. Carioti* Chab. or *R. glaberrima* Dum."

R. GLAUCA Vill., of group FUGAX Gren. W. Barclay. "I agree."

R. SUBCORIIFOLIA Barclay. R. & M. Corstorphine. "Quite correct. It is one of the plants which would formerly have been referred to var. *incana* Borrer."

R. RECONDITA Pug. H. J. Riddelsdell. "This is *R. pomifera* Herrm. I have dropped *recondita.*"

†954. PYRUS COMMUNIS L. Pitlochry, E. Perth, 1877, Miss

THOMSON. Var. ACHRAS (Gaertn.). Singleton Burrows, Glamorgan, WEBB.

966. CRATAEGUS MONOGYNA Jacq., vel OXYACANTHA L. p.p., var. CUNEATA Druce. Albury, Oxford; Uxbridge, Middlesex, DRUCE; Berechurch, N. Essex, D. BROWN; Loch Assynt, Sutherland, SHOOLBRED; Alford, N. Aberdeen, 1918; Arisaig, Westerness; Callander, W. Perth; Campden, E. Gloster, DRUCE. Var. QUERCIFOLIA Loudon. Orme's Head, Carnarvon, 1918; Asthally, Oxon; Alford, N. Aberdeen, DRUCE. Var. PTERIDIFOLIA Loudon. Arundel, W. Sussex; Littlemere, Marston, Oxon, DRUCE. Var. LACINIATA Wallr. Blackpill, Glamorgan, WEBB.

967. C. OXYACANTHOIDES Thuill. Near Manchester, about 1870, JOHN HARDY, ex BAILEY; Watton, W. Norfolk, DRUCE.

†970. C. CRUS-GALLI L. In hedges near Lower Sketty Iska, and beyond Taibach, Glamorgan, Webb. Quite established.

†970. C. TANACETIFOLIA Pers. Moreton, Dorset, LEACH; Clyne Valley, 1911, E. M. WAKEFIELD.

†972. COTONEASTER FRIGIDA Wallich. At Sketty, and near Sketty Iska, Glamorgan, WEBB. Naturalised.

†972. C. SIMONSI Baker. Near Blackpill, Glamorgan, 1918, WEBB.

†1004. RIBES SANGUINEUM Pursh. Near Bridge of Allan, Stirling, DRUCE.

1007. COTYLEDON UMBILICUS-VENERIS L. Alien. On a wall, Basford, Staffs, very rare, I. CHALLINOR in *Ridge Rep.* 1917.

1010. SEDUM FABARIA Koch. Barf, Cumberland, DRUCE.

†1016. S. ALBUM L. Near Barf, Cumberland; Llanwryst, Carnarvon; Ballater, Aberdeen, DRUCE.

†1020. S. CEPAEA L. Edge of Hambledon Common, Surrey, 1912, BISHOP.

*1028. DROSERA LONGIFOLIA L. Pembroke, ARNETT.

1032. MYRIOPHYLLUM SPICATUM L. Arthog, Merioneth, TOWNDROW.

1033. M. ALTERNIFLORUM DC. Alford, Corgarff, N. Aberdeen; Drum, &c., S. Aberdeen; Arisaig, Westerness, DRUCE.

1036. CALLITRICHE OBTUSANGULA Le Gall. Staffs, *Ridge Rep.* 1917.

1037. C. PALUSTRIS L. (VERNA). Cheddar, N. Somerset, Miss TODD.

1039. C. INTERMEDIA Hoffm., var. ANGUSTIFOLIA (Hoppe). Lyndhurst, S. Hants, DRUCE.

*1041. C. TRUNCATA Guss. Chesterfield canal, Notts, Carr, ex GROVES; near Clumber, Notts, Mrs SANDWITH.

1052. EPILOBIUM ROSEUM Schreb. Dolgelley, Merioneth, TOWNDROW.

1057. E. PALUSTRE × PARVIFLORUM. Melmerby, Cumberland, MASON, vide sp.

†1060. CLARKIA PULCHELLA Pursh. Welbeck, Notts, 1918, GOULDING.

†1061. OENOTHERA BIENNIS L. Bristol, (No. 6), I. M. ROPER; Barmouth, Merioneth, TOWNDROW; Staffs, *Ridge Rep.*

1073. CIRCAEA ALPINA L. Meole Brace, Salop, MELVILL. See *Rep. B.E.C.* 225, 1917.

†1091. BUPLEURUM LANCIFOLIUM Hornem. (PROTRACTUM). Abingdon, Berks, DRUCE and GAMBIER-PARRY; Iffley, Oxford, DRUCE.

1094. B. TENUISSIMUM L. Three miles inland, Greatham Saltmarsh, Durham, extinct in old stations, HESLOP-HARRISON.

†1099 (2). Apium leptophyllum F. v. Muell. Bedminster, W. Gloster, M. Cobbe.

†1109. Prionitis Falcaria Dum. Port Talbot, Glamorgan, 1910-13, Webb.

1113. Pimpinella major Huds. By the Teith, Callander, W. Perth, looking quite native, 1918, Druce.

1114. P. Saxifraga L., var. dissecta With. Barmouth, Merioneth, Towndrow.

1126. Anthriscus sylvestris Hoffm., var. angustisecta Druce. Glen Nevis, Arisaig, Westerness; Methuen, M. Perth; Callander, W. Perth; Blair Athol, E. Perth; Ballater, S. Aberdeen; Alford, Corgarff, N. Aberdeen; Cove, Kincardine; Bridge of Allan, Stirling, Druce. Var. latisecta Druce. Dartmouth, S. Devon; Burpham, Lewes, W. and E. Sussex; Chertsey, Surrey; Chiselhurst, Kent; Rugby, Warwick; Bangor, Carnarvon, Druce.

†1128. A. Cerefolium Hoffm. Trewsbury, Gloster, Talbot; Marston, Oxon, Druce.

1136. Oenanthe silaifolia Bieb. (media). Amberley, W. Sussex, Burdon and Druce. Recorded in *Top. Bot.* on faith of specimen in *Winch Herb.*, and from Amberley *New Bot. Guide* in *Fl. Sussex* where Arnold says not recently recorded.

1138. Oe. fistulosa L., var. Tabernaemontani Gmel. Amberley, W. Sussex, Druce.

†1153. Heracleum villosum Fisch. Waste ground, Denham, Bucks, Redgrave.

†1157. Coriandrum sativum L. Port Talbot, Glamorgan, Webb.

*1169. Caucalis nodosa Scop., var. pedunculata (R. & F.) Druce. Burpham, W. Sussex, Druce; Pinton Hook Lock, Middlesex, 1917, Britton.

†1171. C. LATIFOLIA L. Welbeck, Notts, GOULDING.

†1177. SAMBUCUS RACEMOSA L. Arisaig, Westerness, DRUCE and Mrs WEDGWOOD.

1193. GALIUM MOLLUGO × VERUM. Berry Head, S. Devon !, M. COBBE.

1194. G. ERECTUM Huds. Burpham, W. Sussex, 1918, BURDON and DRUCE; Bleakdown Golf Links, Surrey, M. COBBE and LADY DAVY.

†1219. KENTRANTHUS RUBER Druce. Barmouth, Merioneth, TOWNDROW.

†1225. VALERIANELLA CARINATA Lois. Ide, Devon, 1918, Miss TODD, vide sp.

†1229. DIPSACUS FULLONUM L., var. SATIVUS L. Woodhall Spa, Lincoln, ALSTON.

†1242. GRINDELIA SQUARROSA Dunal. Woodhall Spa, Lincoln, ALSTON.

†1244. SOLIDAGO LANCEOLATA L. Near Byfleet, Surrey, LADY DAVY and DRUCE.

†1245. S. CANADENSIS L. Brechin, Forfar, DRUCE.

1248. BELLIS PERENNIS L., a discoid and a proliferous form. Mundesley, W. Norfolk, 1918, HORWOOD; discoid form near Farley Green, Surrey, BRITTON.

†1250. ASTER SALIGNUS Willd. Marston, Oxford, DRUCE; near Byfleet, Surrey, LADY DAVY and DRUCE.

†1259. A. LINOSYRIS Bernh. Port Clarence, Durham, HESLOP-HARRISON.

†1264. ERIGERON MUCRONATUS DC. Wall at St Lawrence, Isle of Wight, REDGRAVE. Perfectly naturalised.

†1271. ANAPHALIS MARGARITACEA Clarke. Newton Blossomville, Bucks, MASON.

1277. GNAPHALIUM SUPINUM L., var. FUSCUM Scop. In good condition on the cliffs of Lochnagar, S. Aberdeen, 1918, DRUCE.

1279. INULA HELENIUM L. Turvey, Beds, MASON; Aldermaston, in a copse far from houses, Berks, for some years, KING.

†1291. AMBROSIA ARTEMISIFOLIA L. Woodhall Spa, Lincoln, ALSTON; Woodstock, Oxford, COLES.

†1292. A. TRIFIDA L. Guildford, Surrey, KENNEDY; Welbeck, Notts, GOULDING.

†1302. HELIANTHUS RIGIDUS Desf. Botley, 1915-17, Marston, Oxford, 1914-18, DRUCE.

†1302 (2). H. SCABERRIMUS Elliott. Galashiels, Selkirk, I. M. HAYWARD.

†1306. GUIZOTIA ABYSSINICA Cass. Swaythling, S. Hants, 1918, RAYNER.

†1311. BIDENS PILOSA L. Bradford, York, CRYER.

†1314. MADIA SATIVA Molina. Elland, York, HORRELL. Det. A. THELLUNG.

†1344. ANTHEMIS RUTHENICA Bieb. Slough, Bucks, DRUCE; Woodhall Spa, Lincoln, ALSTON: Mirfield, York, HORRELL.

1347. A. COTULA L., forma DISCOIDEA. Wrentham, W. Suffolk, HORWOOD.

†1356 (7). CHRYSANTHEMUM MAXIMUM DC. Kirkstall, York, 1917, HORRELL.

1359. MATRICARIA MARITIMA L. Cove, Kincardine, 1918, DRUCE.

†1362. M. SUAVEOLENS Buch. Melmerby, Cumberland, MASON;

Cove, Kincardine; Alford, N. Aberdeen, DRUCE; Barmouth, Merioneth, TOWNDROW.

†1363. M. DECIPIENS Koch. Hull, York, WATERFALL.

1367. ARTEMISIA ABSINTHIUM L. St Anne's-by-the-Sea, W. Lancs, 1908, BAILEY.

†1380. A. BIENNIS Willd. Bedminster, M. COBBE; St Philip's, Bristol, DRUCE.

1401. SENECIO VULGARIS L., var. RADIATUS Koch. Barmouth, Merioneth, TOWNDROW, in *lit.*; Bridgwater, Somerset, M. COBBE.

†1411. CALENDULA ARVENSIS L. Waste ground, Denham, Bucks, REDGRAVE; Bedminster, Bristol, M. COBBE.

†1412 (6). ECHINOPS SPHAEROCEPHALUS L. Goring, Oxford, in a hedge, GAMBIER-PARRY.

1418. ARCTIUM LAPPA L. Staffs, *Ridge Rep.* 1917.

1424. CARDUUS ACANTHOIDES × NUTANS. A magnificent specimen at Burpham, W. Sussex, 1918, BURDON and DRUCE.

1425. C. TENUIFLORUS Curt. Welbeck, Notts, GOULDING.

1433. CIRSIUM ARVENSE Scop., var. MITE Koch. Potterne, Wilts, GWATKIN, vide sp.

†1449. CENTAUREA JACEA L. Port Talbot, Glamorgan, 1911, WEBB.

†1459 (2). C. ORIENTALIS L. Woodhall Spa, Lincoln, ALSTON.

†1462. C. SOLSTITIALIS L. Port Eynon, Port Talbot, Glamorgan, WEBB.

†1470. C. SALMANTICA L. Eastville, Bristol, M. COBBE.

†1477. CARTHAMUS TINCTORIUS L. Byfleet, Surrey, A. B. COBBE; near Fenton, N. Staffs, *Ridge Rep.* 1917.

†1478. Scolymus hispanicus L. Welbeck, Notts, Goulding.

1480. Cichorium Intybus L. Arthog, Merioneth, Towndrow. Var. glabrum Presl. St Philip's, Bristol, Miss Todd.

1483. Arnoseris minima Link. Abundant in stubble fields, Byfleet, Surrey !, A. B. Cobbe.

1497. Crepis capillaris Wallr., var agrestis (W. & K.). Burpham, W. Sussex, Druce.

1502. C. taraxacifolia Thuill. Potterne, Wilts, Gwatkin.

†1512. Hieracium aurantiacum L. In considerable quantity on a railway bank near Coventry, Warwick, 1918, Druce.

1548. H. hypochaeroides Gibs. Melmerby, Cumberland, Mason.

1599. H. vulgatum Fr. Gowerton, Grovesend, Skewen to Neath, Glamorgan, Webb.

*1614. H. diaphanoides Lindeb. Norton, Rhyd y defaid, Hendrefoilan, Glamorgan, Webb.

1629. H. tridentatum Fr. Fforest Newydd, Glamorgan, Webb; * Staffs, *Ridge Rep.*

1630. H. rigidum Hartm. Clyne valley, Pont Lliw, &c., Glamorgan, Webb.

*1633. H. salicifolium Lindeb. Arisaig, Westerness, Druce.

*1637. H. boreale Fr., var. rigens (Jord.). Crowthorne, Berks, Druce.

1644. Leontodon taraxacoides (Vill.), var. leiolena (Bisch.) comb. nov. Gt. Orme, Carnarvon, 1918, Druce.

1645. Taraxacum obliquum Dahlst. Pyrford, Surrey; Bracknell, Berks, Druce.

1646. T. PALUDOSUM Schlecht. Loddon Bridge, Berks, DRUCE; Barrow Hill, N. Somerset, Mrs SANDWITH.

1646. T. SPECTABILE Dahlst. N. & S. Aberdeen, 1918, DRUCE.

1657. SONCHUS ASPER Hill, var. LACINIATUS Lej. Falmouth, Cornwall; Berry Head, Devon; Swanage, Dorset; Eye Green, Northants, DRUCE. Var. PUNGENS Bisch. Woodhall, N. Lincs, ALSTON; Mullion, Cornwall, 1904; Dartmouth, S. Devon; Burpham, W. Sussex; Goring 1896, Studley, Oxford, 6 feet high; Holme Fen, Hunts; Rescobie, Forfar; Glen Spean, Westerness; Ware, Herts; Northampton; Wilsford, Wilts; Wytham, Berks, DRUCE; Fairford, Gloster; Lighthorne, Warwick, C. E. PALMER. Var. INTEGRIFOLIUS Wallr. Hambledon, Bucks; Welwyn, Herts; Tilehurst, Berks; Bangor, Carnarvon; Oxford, DRUCE; Odiham, N. Hants, C. E. PALMER. Var. GLANDULOSUS (Coss.). Watton, W. Norfolk; Blakeney, W. Gloster; Burpham, W. Sussex, DRUCE.

1658. S. OLERACEUS L., var. ALBESCENS Neum. Cold Arbor, Oxford; Bangor, Carnarvon, 1918, DRUCE.

†1670. CAMPANULA MEDIUM L. Railway bank near Newcastle, Durham, HESLOP-HARRISON.

1672. C. LATIFOLIA L. Fairbourne, Merioneth, TOWNDROW.

1673. C. TRACHELIUM L., with glabrous calyx. Caterham, Surrey, Hon. Mrs INGILBY.

†*1674. C. RAPUNCULOIDES L. Sittingbourne, Kent, 1918, RIDLEY; Staffs, *Ridge Rep.*

†1679. LEGOUSIA SPECULUM-VENERIS Fisch. Elland, York, DIXON.

†1691 (2). PERNETTIA MUCRONATA Gaudich. Pyrford Rough, Surrey, seeded from the garden of the late Sir Charles Dilke to the adjoining heath. Doubtless bird-carried. DRUCE.

†1700. ERICA MEDITERRANEA L. Plants quite established on wild heathy ground near Rhododendrons in the East Riding, York, 1918, A. E. GREAVES, in *lit.*

†1705. LEDUM PALUSTRE L. Still lingering on its old habitat, but not flowering this season. The point has been raised as to whether this Stirlingshire plant is the true *palustre or latifolium.* Unfortunately the available material leaves me uncertain. As it occurred last August the leaves of the barren shoots measured 15-17 mm. by 30 mm. and were not marginally enrolled.

1709. PYROLA MINOR L. Melmerby, Cumberland, MASON.

1722. STATICE MARITIMA Mill. In magnificent growth at Berry Head, S. Devon, DRUCE.

1723. S. LINEARIFOLIA Lat. A form with broader and more erect leaves growing in small tufts at Hamsworthy, Dorset, DRUCE and GODFERY; St Cyrus, Cove, Kincardine, DRUCE.

1723 (2). S. PLANIFOLIA Druce. Cairn Gaudr, Inverness, *Hb. H. C. Watson.*

1732. LYSIMACHIA THYRSIFLORA L. Callander, W. Perth, DRUCE.

1743. ANAGALLIS FEMINA Mill. Byfleet, Surrey, M. COBBE.

†1748. FRAXINUS ORNUS L. Grafted early in the 19th century on the butt of a large elm near S. Elkington, N. Lincoln, J. CLARE HUDSON.

1757. CENTAURIUM RAMOSISSIMUM (Pers.) Druce = C. PULCHELLUM (Sm.) Druce. Lower Tees Marsh, Durham, HESLOP-HARRISON. Forma ELONGATUM (Wittr.). Tees Marshes, Durham, HESLOP-HARRISON.

1763. GENTIANA AMARELLA L. A pretty deep-flowered plant at Gooderstone, W. Norfolk, REYNOLDS.

*1765. G. CAMPESTRIS L. On White Leaf Cross Hill, Bucks, MASON. Confirms it as a Bucks plant.

1777. Polemonium caeruleum L. Scrivelsby, N. Lincs, Alston.

†1781. Heliotropium europaeum L. Mirfield, York, Horrell.

†1783. Omphalodes verna Moench. In a wood near Chiselhurst, Kent, known there for many years, 1917, Allen, vide sp.

†1787. Lappula echinata Gilib. Welbeck, Notts, Goulding.

†1789 (3). Benthamia (Amsinkia) lycopsioides Lindl. Charlbury, Oxford, Powell; Charterhouse, Surrey, Evans; Bosahan, Cornwall, C. Vivian; Welbeck, Notts, Goulding.

†1789 (5). B. intermedia (F. v. M.) Druce. Kirkstall, York, Horrell.

*1790. Symphytum officinale × densiflorum Buckn. Marston, Oxford, 1918, Druce.

1791. S. tuberosum L. Alford, N. Aberdeen, Druce.

†1793. S. orientale L. Chipstead, Surrey, long established, Britton.

†1800. Anchusa officinalis L. Hayle, Cornwall, Rilstone; Aberavon, Glamorgan, Webb; Woodhall Spa, Lincs, Alston; Dean Clough, Halifax, Horrell.

†1801. A. hybrida Tenore. Ovenden, York, 1916, Pullan.

†1808. Pulmonaria officinalis L. Penllegare, Glamorgan, in hedges, 1918, Webb.

†1812. Pneumaria virginica Hill. Pewley Hill, Guildford, Kennedy, ex Bishop.

†1817. Myosotis sylvatica Hoffm. Adventive at Mayals, Parkmill, Glamorgan, Webb.

1820. M. COLLINA Hoffm., var. MITTENII Baker. Wigginton, Oxon, RIDDELSDELL.

†1852. NICANDRA PHYSALOIDES Gaertn. Ashton Gate, Bristol, A. B. COBBE.

†1864. VERBASCUM BLATTARIA L. Mudstone Bay, S. Devon, M. COBBE.

†1864 (3). V. SINUATUM L. Portmadoc, Carnarvon, 1916, M. COBBE.

1866. V. LYCHNITIS L. Woodhall Spa, Lincoln, ALSTON; Kirkstall, York, as a hybrid, 1916, PULLAN. Det. TURRILL.

†1868. V. AUSTRIACUM Schott. Kirkstall, York, HORRELL.

†1872. CALCEOLARIA GRACILIS H. B. K. (GLUTINOSA). Beddgelert, Carnarvon, DRUCE.

†1874 (4). LINARIA DALMATICA Mill. Ashwater, Devon, Harvey. Var. MACEDONICA Vel. Highbridge, Somerset, 1918, M. COBBE.

1883. L. MINOR Desf. Near Castle Hill, N. Devon, COUNTESS FORTESCUE; Barmouth, Merioneth, TOWNDROW.

1884. L. SPURIA Mill, an albino form. Copley Wood, N. Somerset, Miss TODD.

†1886. L. CYMBALARIA Mill. Barmouth, Merioneth, TOWNDROW.

†1898. MIMULUS GUTTATUS DC. Dolgelly, Merioneth, TOWNDROW.

†1899. M. MOSCHATUS Dougl. Stourbridge, Worcester, ex. G. CHESTER. Originally found in the county by CARLETON REA. New Mill, Clyne Valley, Glamorgan, WEBB.

†1904. ERINUS ALPINUS L. " Following apparently upon the " agger " making labours of the Romans, this occurs in many places from Chatburn to Bolton-by-Bowland and appears to be increasing in

W. York, but most of the stations are just within the S. Lancashire boundaries, on natural rock-faces left after making bridges. *Rumex scutatus*, of alien origin, occurs with it." J. FRY PICKARD in *Nat.* 347, 1917. This record strengthens the case as a remote introduction. It is now, I believe, generally conceded that it was intentionally sown on the Roman Wall near Hexham. The name of its introducer was given to me.

*1905. VERONICA SPICATA L. Specimen not to be distinguished from the eastern counties plant, Heathwaite, Westmorland, 1916, PEARSALL. Det. TURRILL. The two plants, *hybrida* and *spicata*, can scarcely be separated as species.

1907. V. OFFICINALIS L., var. (vel forma) INTEGRA Druce. The Glen, Peebles, DRUCE and S. TENNANT. A plant approaching *hirsuta* Hopk. was sent from the vicinity of Edinburgh in 1918 by LADY DOUIE.

*1909. V. MONTANA L. Barmouth, Merioneth, TOWNDROW.

1910. V. SCUTELLATA L., var. VILLOSA Schum. Blackpill, Glamorgan, WEBB.

*1912. V. AQUATICA Bern. Burpham, W. Sussex, DRUCE.

1931. EUPHRASIA STRICTA Host. Highfield, Dalton-in-Furness, 69b; Hawkshead Moor, N. Lancs, PEARSALL.

1932. E. BOREALIS Wettst. Lower meadows of Snowdon, Prof. VINES; Beddgelert, Carnarvon; Holyhead, Anglesey; Berry Head, S. Devon; Alford, Cabrach, N. Aberdeen, DRUCE.

1933. E. BREVIPILA B. & G. Holyhead, Anglesey; Mallaig, Westerness; Ballater, S. Aberdeen, DRUCE; Wellington College, Berks, 1913, MONCKTON. Forma EGLANDULOSA Buckn. Perranporth, Cornwall, RILSTONE.

*1933 (2). E. FENNICA Kihlm. Near Cabrach, N. Aberdeen, a tall plant occurred which probably belongs here.

1934. E. NEMOROSA Pers. Little Tollingham, W. Norfolk, 1917, ROBINSON, with forma COMPACTA. A tall, branching, slender form, Pyrford, Surrey, Lady DAVY and DRUCE, belongs to the type. Quarries near Afonwen, Flint, WATERFALL. Var. CILIATA. Holyhead, Anglesey, DRUCE; Wellington College, &c., Berks, MONCKTON; Pyrford Rough, Surrey !, 1917, Lady DAVY.

1935. E. CURTA Fr., var GLABRESCENS Wettst. Hawkshead Moor, N. Lancs, 69b., PEARSALL, teste BUCKNALL.

1939. E. GRACILIS Fries. For this name Mr Williams uses *E. micrantha* Reichb. Fl. Germ. Excurs. 358, 1831. Garboldisham, W. Norfolk, ROBINSON. See *Rep. B.E.C.* 240, 1917. This Bucknall names *gracilis*, but Pearsall refers it to *E. curta*, var *glabrescens*. Lumb thinks it is *gracilis* Fr. Ben Nevis, Westerness, 1918, DRUCE. S. Pickenham, W. Norfolk, ROBINSON; Coxhill Green, Surrey, MONCKTON. Var. PRIMARIA Fr. The Glen, Peebles, DRUCE, teste BUCKNALL. Pearsall thinks it *Kerneri*, Lumb *borealis*.

1940. E. SCOTTICA Wettst. Arisaig, Mallaig, Westerness, DRUCE.

1940 (2). E. MINIMA Fr. Moel Hebog, Cwm Meillionen, Carnarvon, 1917, DRUCE; Crib Goch, Carnarvon, 1918, Prof. VINES; Cabrach, N. Aberdeen, DRUCE. Lumb and Pearsall think the latter is *minima*, Bucknall a stunted *gracilis*, which however did not suggest itself to me when gathering it. The Crib Goch plants Bucknall thinks are *curta* (one glabrescent *curta* was in the gathering). Bigland, N. Lancs, PEARSALL; Holyhead, Anglesey, 1917, DRUCE.

1940 (2). E. MINIMA Fr., var. ARBUSCULA Buckn. Aberfraw Common, Anglesey, Mrs WEDGWOOD and DRUCE, teste Bucknall, but Pearsall thinks it *occidentalis*.

1941. E. ROSTKOVIANA Hayne. This Mr Williams makes the type *E. officinalis* L. In the *Linnean Herb.* two out of the three specimens on the sheet labelled *officinalis* by Linnaeus are *Rostkoviana*, the middle one is *nemorosa*. Methven, M. Perth; Lochnagar, S. Aberdeen; Cabrach, N. Aberdeen, DRUCE; Wellington College, Easthampstead, &c., Berks; Yately, N. Hants, MONCKTON.

1950. Pedicularis sylvatica L., with the centre stem erect as in *palustris*. Pyrford Heath, Surrey, Lady Davy and Druce.

*1955. Rhinanthus monticola Druce. Lochnagar, S. Aberdeen, Druce.

*1966. Orobanche reticulata Wallr., var. procera (Koch) Druce. Parasitic on *Cirsium lanceolatum* or *Carduus nutans*, near Chester, but the sender, Mr A. Dallman, who has done so much in investigating the flora of that area, was unable to visit the spot to see which species of thistle it was attached to. Mr Kennedy sent me from Guildford in 1916 an *Orobanche* growing on *C. nutans* which possibly belongs to *reticulata*. It is not quite identical with var. *procera* from Yorkshire.

1966. O. major L. Shown to me growing in his garden by Mr F. Robinson, Watton, W. Norfolk, 1918.

1971. O. minor Sutt. Potterne, Wilts, Gwatkin; Hamsworthy, Dorset; Watton, W. Norfolk; Berry Head, S. Devon, Druce.

†1974. Lathraea clandestina L. Roosthole Pond, near Horsham, Sussex, planted there two years ago, Webster, in *lit*. Recorded in order to avoid mistakes about its origin.

*1976. Utricularia major Schmid. Staffs, *Ridge Rep*. 1917.

1977. U. intermedia Hayne. Strensall Common, York, 1916, Corporal Andrew Templeman, H. J. Wilkinson in *Nat*. 160, 1918.

1978. U. minor L. In abundance in a pond near Pyrford, Surrey, Lady Davy, but not flowering. Nearly extinct in Glamorgan, but found by W. C. Llewellyn at Rhydypardy, 1913, Webb, in *lit*.

*1980. Pinguicula vulgaris L. Prescelly Mountain, Pembroke, 1918, Arnett.

1988. Mentha rotundifolia Huds. Near Drum, in a ditch far away from houses, S. Aberdeen*, 1918, Mrs Wedgwood and Druce;

Hambledon, S. Hants, H. Butler; Sudbury, Staffs*, but adventitious, Boydon in *Ridge Rep.*

1989. M. alopecuroides Hull. Alford, N. Aberdeen, Druce.

1990. M. longifolia × spicata. Near Holyhead, Anglesey, 1917, Druce.

1990. M. longifolia Huds., var. Nicholsoniana (Strail). In cultivated fields, Glen Lea, Hindhead, Surrey, 1905, Bailey.

1990. × M. villosa Huds. Under this hybrid comes a plant from Little Barrington Green, E. Gloster, 1918, Bishop.

1993. × M. piperita L. Alford, N. Aberdeen; Drum, S. Aberdeen, Druce. Var. citrata (Ehrh.). Chiddingfold, Surrey, in great quantity in a swamp of over an acre, Bishop, in *lit.*

1994. M. aquatica L., var. subspicata Weihe. Peat Moors, Shapwick, N. Somerset, Miss Todd.

1997. × M. gentilis L. Callander, W. Perth, Druce. Var. gracilis Briq. Woking, Surrey, M. Cobbe; near Pyrford Rough, Surrey, Lady Davy and Druce.

1999. × M. rubra Huds. Musselburgh, Edinburgh, J. H. Balfour, in *Hb. Druce.*

2007 (2). Thymus alpestris Tausch. Widdy Bank, Durham; Ben Laoigh, Argyll and M. Perth; Ben Lawers, M. Perth; Glen Brittle, Skye, Druce.

2011. Satureia Calamintha Scheele. Brean Down, N. Somerset, Miss Todd. Var. Briggsii Druce. Kenton, S. Devon, Miss Todd.

†2017. Melissa officinalis L. Naturalised by stream, Parkmill, Glamorgan, Webb; Barmouth, Merioneth, Towndrow.

†2019 (2). SALVIA SCLAREA L. Among lucerne, Sibford, Oxford, LAMB, vide sp.

2023. S. PRATENSIS L. Burpham, W. Sussex, BURDON.

†2024. S. SYLVESTRIS L. Woodhall Spa, Lincoln, ALSTON.

†2025. S. NEMOROSA L. Guildford, Surrey, KENNEDY.

2026. S. VERBENACA L., the large-flowered form. Burpham, W. Sussex, DRUCE.

†2039. DRACOCEPHALUM PARVIFLORUM Nutt. Guildford, Surrey, CLARKE; Swaythling, S. Hants, RAYNER, vide sp.; Welbeck, Notts, GOULDING; Bristol, Mrs SANDWITH.

2042. SCUTELLARIA GALERICULATA L., var. LITTORALIS Druce. Mallaig, Westerness, DRUCE.

2044. PRUNELLA VULGARIS L., var. NEMORALIS Beg. Burpham, W. Sussex, DRUCE.

*2051. STACHYS ALPINA L. Near a field path near Cuckmere River, E. Sussex, WESTELL in *Boys' Own Nature Book*, 1917. Has this been corroborated?

†2055. S. LANATA Jacq. Marston, Oxford, DRUCE.

2056. × S. AMBIGUA Sm. Brixham !, S. Devon, M. COBBE.

†2059. S. ANNUA L. Welbeck, Notts, GOULDING; Mirfield, Hunslet, York, HORRELL.

2062. GALEOPSIS TETRAHIT L., var. NIGRICANS Bréb. Belfast, Co. Down, KENNEDY.

2062. G. SPECIOSA × TETRAHIT = G. SULFUREA. Near Aberystwith, Cardigan, FOX, in *lit*.

2063. G. DUBIA Leers. Near Thorne, Notts, in plenty, NOEL SANDWITH.

2064. G. INTERMEDIA Vill. Yiewsley, Middlesex, DRUCE. Plants approaching this were found by T. H. GREEN in fields near Avebury, Wilts, in 1918.

†2065. LEONURUS CARDIACA L. In some quantity at Sutton's Trial Grounds, Reading, Berks, MURRAY.

†2069. LAMIUM MACULATUM L., var. LAEVIGATUM Ait. Great Orme, Carnarvon, DRUCE; Great Haywood, Staffs, BOYDON in *Ridge Rep.*

2079. TEUCRIUM SCORODONIA L., var. DENTATUM Bab. Killay, Glamorgan, PHOEBE SIMONS.

2090. PLANTAGO CORONOPUS L., var. MARITIMA Gren. & Godr. Blackpill, &c., Glamorgan, WEBB.

2091. P. MARITIMA L., var. LATIFOLIA Syme. Salt marsh, near Newcastle, Durham, HESLOP-HARRISON.

2092. P. LANCEOLATA L., var. ELLIPTICA Druce. Wickham, Berks, Miss TODD.

†2096. P. LAGOPUS L. Sandal, York, HORRELL.

*2101. LITTORELLA UNIFLORA Asch. Tockenham Park, N. Wilts, HURST.

†2110. AMARANTHUS RETROFLEXUS L. Meanwood, York, HORRELL; Oxford, TROLLOPE. Var. DELILEI Thell. Guildford, Surrey, KENNEDY. Det. THELLUNG.

†2113. A. DEFLEXUS L. St Philip's, Bristol, 1916, A. B. COBBE. Det. THELLUNG.

†2114. A. CHLOROSTACHYS Willd., var. ARISTULATUS Thell. Galashiels, Selkirk, 1918, I. M. HAYWARD.

†2116. A. HYBRIDUS L. St Philip's, Bristol, M. COBBE.

†2116 (7). A. DINTERI Schinz, var. UNCINATUS Thell. Thetford, 1916, ROBINSON, (as *Ambrosia*); Shipley, York, CRYER; Meanwood, York, HORRELL.

*2117. CHENOPODIUM RUBRUM L. Patshull, Staffs.

2124. C. LANCEOLATUM Muhl. Dingley, Northants; Rugeley, Staffs, READER, vide sp.

*2124. C. ALBUM L., var. PSEUDOPOLYSPERMUM (Murr). Botley, Oxon, DRUCE.

†2125. C. LEPTOPHYLLUM Nutt. Welbeck, Notts, GOULDING; Byfleet, Surrey !, A. B. COBBE.

†2127. C. GLAUCUM L. Byfleet, Surrey, in some quantity. Shown me by Lady DAVY.

*2128. C. VULVARIA L. Staffs, *Ridge Rep.*

*2129. C. POLYSPERMUM L. (CYMOSUM Moq.). Staffs, *Ridge Rep.*

†2131. C. STRIATUM (Kras.). Guildford, Surrey, KENNEDY; Goring, Oxford, GAMBIER-PARRY.

†2132 (3). C. HIRCINUM Schrad. Welbeck, Notts, GOULDING.

†2136. BETA TRIGYNA W. & K. Dewsbury, York, HALEY.

2144. ATRIPLEX PATULA L., var. BRACTEATA Weste. Ashton Gate, Bristol, M. COBBE.

†2145. A. TATARICA L. Bristol, Mrs SANDWITH and T. H. GREEN.

*2150. A. MARITIMA Hall. (LACINIATA). Caithness coast, LILLIE, ex BENNETT.

†2153. AXYRIS AMARANTHOIDES L. Woodhall Spa, Lincoln, ALSTON; Welbeck, Notts, GOULDING; Guildford, Surrey, CLARKE.

†2168. SALSOLA TRAGUS L. Bristol, I. M. ROPER.

2175. POLYGONUM PERSICARIA L., var. ELATUM G. & G. Barmouth, Merioneth, TOWNDROW.

2176. P. TOMENTOSUM Schrank. Edenbridge, Kent, 1918, TALBOT; Staffs*, *Ridge Rep*, 1917.

2179. P. MINUS Huds., var. INTERRUPTUM (Meisner). Abingdon, Berks, DRUCE.

†2183. P. PATULUM M. Bieb. (BELLARDII auct.). Ware, Herts, HIGGENS; North Wales, 1917, DALLMAN; Dean Clough. Halifax, York, HORRELL; Bradford, York, CRYER.

2184. P. AEQUALE Lindm. Teignmouth, S. Devon, Miss TODD, vide sp.

*2184 (2). P. CALCATUM Lindm. Pond-side, Dunsfield Common, Surrey, 1917, BISHOP. Later on we hope to obtain Lindman's corroboration of this name.

†2191. P. CUSPIDATUM S. & Z. Marston, Oxford; Tay-side, M. Perth; Teith-side, Callander, W. Perth; Don-side, N. Aberdeen; Ballater, S. Aberdeen; Tweedside, Selkirk, DRUCE; Wye, Monmouth, GAMBIER-PARRY; abundant and quite naturalised in Tawe Valley, Glamorgan, WEBB.

2195. RUMEX MAXIMUS Schreb. Burpham, W. Sussex, DRUCE.

[2200. R. SYLVESTRIS Wallr. Staffs, *Ridge Rep.* 1917.]

2201. R. SANGUINEUS L. Rhydyfro, Llanynog, Swansea Valley, Glamorgan, WEBB.

2203. R. CONGLOMERATUS × OBTUSIFOLIUS = × R. ABORTIVUS Ruhm. Bodorgan, Anglesey, 1918, Mrs WEDGWOOD and DRUCE. In this place a most instructive series of the hybrids occurred as handsome plants growing with both parents and varying towards one or other of them.

2205. R. PULCHER L. Ware, Herts, DRUCE; Sandal, York, HORRELL; Carmarthen, HAMER; Sketty, Glamorgan, WEBB.

†2210. R. SALICIFOLIUS Weinm. Swaythling, S. Hants, a forage introduction, RAYNER; St Philip's, Bristol, 1918, Miss TODD.

†2210 (2). R. DENTATUS L. Plants near this, Elland, Sandal and Tingley, York, HORRELL.

†2213. ARISTOLOCHIA CLEMATITIS L. Growing on the roadside of a garden wall, Bridge of Allan, Stirling. The roots had spread from the garden and penetrated the wall as I found by examination, DRUCE.

†2230. EUPHORBIA CYPARISSIAS L. Near Simple Druid, Maenclochog, Pembroke, ARNETT; Aberavon, &c., Glamorgan, PHOEBE SIMONS.

2236. E. EXIGUA L., var. RETUSA DC. Port Clarence, Durham, HESLOP-HARRISON.

2237. E. LATHYRUS L. Crawley Woods, Glamorgan, looking native, WEBB.

2242. MERCURIALIS PERENNIS L. Monoecious form from Mickleham Down, Surrey, 1916 [Ref. No. 1559], BRITTON.

2244. ULMUS MONTANA Stokes, var. GRANDIDENTATA (Dumort.). Cheney Lane, Oxford, DRUCE.

2245. U. NITENS Moench, var. HUNNYBUNI Moss. Near Mount End, Essex, 1914, BRITTON.

2246. U. PLOTII Druce. Sketty, Glamorgan, WEBB, judging by leaf-characters.

2256. BETULA PUBESCENS Ehrh. Studland, Dorset, 1917, C. B. GREEN.

2258. ALNUS GLUTINOSA Gaertn. The typical plant with medium size catkins, Lligwy, Anglesey; Arisaig, Westerness, DRUCE.

2259. CARPINUS BETULUS L. Barmouth, Dolgelly, Merioneth, TOWNDROW. Doubtless planted.

2262. QUERCUS ROBUR × SESSILIFLORA. Barmouth, Merioneth, TOWNDROW.

2267. SALIX PENTANDRA L. Tewkesbury, W. Gloster, BISHOP.

2268. S. FRAGILIS × TRIANDRA. Thames bank, below Medmenham, Bucks, FRASER.

2271. S. PURPUREA L. Corgarff, N. Aberdeen; Arisaig, Westerness, DRUCE.

2275. S. AURITA × CINEREA = × S. LUTESCENS A. Kern. Melmerby, Cumberland, MASON.

2275. S. AURITA × CINEREA = × S. LUTESCENS A. Kern. Quair, Peebles, DRUCE, nearer *cinerea*.

2276. S. AURITA L., var. MINOR Syme. Near Cabrach, N. Aberdeen, DRUCE.

*2277. S. CINEREA × PHYLICIFOLIA. Staffs, *Ridge Rep.* 1917.

2277. S. CINEREA L., var. OLEIFOLIA (Sm.). Shapwick, N. Somerset, Miss TODD.

*2285. S. HERBACEA L. On the Coniston Grit crags of Cantley Crag, 2100 feet, N. W. York, WILSON.

†2288. POPULUS ALBA L. Large trees at Burpham, W. Sussex, BURDON and DRUCE.

†2294. P. TACAMAHACCA Mill. Melmerby, Cumberland, MASON; Galashiels, Selkirk, I. M. HAYWARD.

*2297. CERATOPHYLLUM DEMERSUM L. Graemshall Loch, Orkney, MAGNUS SPENCE, ex BENNETT in *Trans. Bot. Soc. Edin.* 134, 1917.

[2300. Stratiotes Aloides L. Planted at Madeley, Staffs, *Ridge Rep.*]

2301. Malaxis paludosa Sw. Bog near the Lakes, Arthog, * Merioneth, Towndrow ; on a moor near Sedbergh, N.W. York, very rare species in the county, Wilson.

2315. Helleborine palustris Schrank. Tenby, Pembroke, Arnett ; Watton, W. Norfolk, Robinson and Druce.

2319. H. atropurpurea Druce (media Fries, p.p.). Arnside Knot, Westmorland, Pearsall. Var. Crowtheri Druce. Flowered well this year in Grassington Wood.

2325. Orchis praetermissa Druce. Veryan, St Enoder, Newquay, *Herb. E. Thurston*; Bantham, S. Devon, Miss Todd; Amberley, Sussex; Woking, Surrey, Druce; Yiewsley, Middlesex. Dymes; near Bangor, Carnarvon, Griffith; Stow Bedon, Watton, W. Norfolk, Druce; Margam, Kenfig, Baglan, Glamorgan, Webb; Alvie Lodge, Easterness, 1905, Miss Thomson.

2325. O. praetermissa × Fuchsii. Watton, Stow Bedon, W. Norfolk, Druce; Durham, Heslop-Harrison.

2325. O. praetermissa × maculata. Near Tenby, Pembroke, Mrs Wedgwood; Woodbury, Devon, Miss Todd; Sussex, Bedford, as *latifolia*.

2326. O. incarnata L. Yiewsley, Middlesex, Dymes.

2326. O. incarnata × praetermissa. Yiewsley, Middlesex, Dymes. Var. pulchella Druce. Hamsworthy, Dorset, Druce; woods between Kincraig and Milehead, Easterness, 1904, Miss Thomson.

2327. O. maculata L. vera. Ide, S. Devon, Miss Todd.

2327. O. Fuchsii Druce, small-flowered form. Burpham Downs, W. Sussex, 1918, Druce.

*2331. O. HIRCINA Sw. Three plants found in St Ouen's Bay. Jersey, 1918, ATTENBOROUGH. A most interesting addition to the Channel Island Flora. It occurs on the dunes of Dragey, Normandy and at Dinan, from whence seeds have probably been wind-borne. It flowered this year in Kent and Sussex.

2334. OPHRYS SPHEGODES Mill. Slopes of a hill between Llandrillo and Colwyn, Denbigh, May 1891, BICKHAM. An interesting addition to the flora of the Principality. Quenvais, Jersey, L. GARLAND and ATTENBOROUGH.

2335 (2). O. TROLLII Heg. Brading, Isle of Wight, 1918, MAUD 'NEAL.

2336. O. MUSCIFERA Huds., a form with suppressed petals. Canterbury, WALKER; Plympton, S. Devon, BRIGGS 1876 in *Hb. Wats.*

2338 (2). HABENARIA DENSIFLORA (Wahl.). Upper Marsh of the Lower Tees, HESLOP-HARRISON.

2340. H. VIRIDIS Br., var. BRACTEATA A. Gray. Felton Meads, W. Gloster, THWAITES; Sapperton Keynes, E. Gloster, TALBOT; Clova, Caenlochan, Forfar, 1844, *Hb. Wats.* Var. OVATA Druce. Unst, Shetland, *Hb. Wats.*

†2360 (2). SISYRINCHIUM ANGUSTIFOLIUM Mill. As a spontaneous garden-weed at Gateshead, Durham, TEMPERLEY.

†2363 (10). TRITONIA CROCOSMIFLORA Nicholson. Near Lyme Regis, Dorset, 1917, REDGRAVE.

†2375. NARCISSUS TAZETTA L. Yiewsley, Middlesex. 1918, DYMES, as the garden-form, "Paper White," teste CHITTENDEN.

2385. POLYGONATUM MULTIFLORUM All. Stated by Watson (*Top. Bot.*) to be dubiously indigenous in Cumberland, for which county a few records are given in the Lake District Flora. It has been sent this year by the Rev. W. WRIGHT MASON from Melmerby in that county.

†2390. Asphodelus fistulosus L. Oxford, **Trollope**; Woodhall Spa, Lincoln, **Woodruffe-Peacock**.

2396. Allium vineale L., var. compactum (Thuill.). Broad Mayne, Dorset, 1918, Hon. F. R. H. **Henley**; Billingshurst, Sussex, as a large four-headed form, 1918, **Webster**.

†2414. Ornithogalum nutans L. Besilsleigh, Berks, in considerable quantity and great beauty, a relic of Speaker Lenthall's garden, **Druce**.

2420. Gagea lutea Ker. Birdlip, W. Gloster, H. **Butler**.

2422. Colchicum autumnale L., forma vernale. See Syme *E.B.* t. 1545. The specimen for the plate came from Devizes, Wilts. It flowered in April and May. This year Miss **Butler** found it in April at Birdlip, W. Gloster.

2429. × Juncus diffusus Hoppe. Shapwick, N. Somerset, Miss **Todd**.

†2441. J. tenuis Willd. Abundant at Pyrford, Surrey, Lady **Davy**; in quarry, Barmouth, near the lake above Arthog, Merioneth, **Towndrow**; still at Wellington College, Berks, where Mr Monckton first found it; Ballater, S. Aberdeen, on the river shingle near a cart-track, Mrs **Wedgwood**; Arisaig, Westerness, in a cart-track leading to the mansion, Mrs **Wedgwood** and **Druce**. Doubtless this is shaken out of American forage. It may be distributed along tracks by the mud adhering to cart-wheels or on the feet of cattle, &c.

2442. J. bufonius L., var. fasciculatus Koch. Arthog, Merioneth, **Towndrow**.

*2444. J. capitatus Willd. Near Rhosneigr, Anglesey, **Bolton King**. This important addition to the Principality was discovered by our member last August. It occurred in good quantity over a limited area but assuredly native, growing with the usual damp heath vegetation.

2453. Juncoides Forsteri (Sm.). Near Dartmouth Castle, S. evon, A. B. Cobbe.

2454. J. multiflorum Druce, var. congestum (DC.) Druce. armouth, Merioneth, Towndrow.

2460. Typha latifolia × angustifolia. Scoulton Mere, W. orfolk, Robinson, who showed it me there in 1918.

2475. Wolffia arrhiza Wimm. In several places between orth Stoke and Burpham, W. Sussex, abundant, Burdon and ruce.

*2479. Sagittaria sagittifolia L. By a secluded spring, grow-ng out of the dripping moss on the bank of a runnel in Lansallos arish, Cornwall, Rilstone, in *lit*.

2489. Potamogeton alpinus Balb. In considerable quantity n the Don near Alford, N. Aberdeen, growing with *P. gramineus*. ome plants seemed to be the hybrid of these species, Mrs Wedgwood nd Druce; near Newash Abbey, Surrey !, Lady Davy.

2507. P. Friesii Rupr. Cirencester, E. Gloster, Greenwood; rick-pits, near Gloucester, a slender form, Miss Todd; Staffs, *Ridge ep.* 1917.

[2510. P. trichoides C. & S. Staffs, *Ridge Rep.* 1917.]

2511. P. interruptus Kit., var. scoparius (Fryer). In abund-nce and in fine condition, Scoulton Mere, W. Norfolk, Druce.

2515. Ruppia maritima L. (spiralis). Teesmouth, Durham, eslop-Harrison.

2518. Zannichellia maritima Nolte. Walstead Park, Whis-on, S. Lancs, Travis; Teesmouth Marsh, Durham, Heslop-arrison.

2518. Z. gibberosa Reichb. Pool near canal, Bridgewater, omerset, Miss Todd. Already recorded for the county.

2521. Zostera nana Roth. Llanmorlais Mudflat, Glamorgan, 1916, Webb.

2533. Scripus maritimus L. A small, condensed form about a foot high, with 1-3 sessile spikelets in immense quantity, Teesmouth, Durham, Heslop-Harrison, nearest *monostachys* Sonder; near St Heliers, Jersey, Attenborough, a similar form best coming under var. *compactus*; also with large sessile spikelets at Hayling Isle, S. Hants, Druce.

2539. S. pauciflorus Lightf. Bagshot Heath, Surrey, 1913, Lady Davy.

2547. Eriophorum paniculatum Druce (latifolium). Melmerby, Cumberland, Mason.

*2554. Schoenus nigricans L. Faskally, near Pitlochry, Perth, July 1877, Miss Thomson. This corroborates one of my own doubtful records. (See *Rep. Bot. Rec. Club* 23, 1883). With Mr T. F. Richards in 1882 I visited Perthshire, and we marked all the plants noticed in E. Perth in journeying from Pitlochry to Braemar. Among them was *S. nigricans* but we could not remember its exact locality, but believed it was in Glen Shee. The List was handed to Buchanan White for his forthcoming Flora, but he, however, doubted its occurrence in the county and as we had no clear recollection of the locality, we suggested querying it, and therefore in the *Flora of Perth* it is only alluded to, but not admitted as a Perthshire species. Among the plants sent home, however, were two or three specimens, but as I had collected it that year from another source it was thought that some specimens might possibly have been left in the drying paper. Recently Miss Thomson presented her herbarium to the University of Oxford and in it was a sheet of *S. nigricans* labelled as above. The plant may therefore now be admitted as a Perthshire species. Faskally is on the East side of the river and therefore the record belongs to E. Perth. It was also found by Lady Davy on Bagshot Heath, Surrey, in 1913.

2560. Carex acutiformis × riparia. Loddon Bridge, Berks, 1918, Druce.

2561. C. VESICARIA × INFLATA. Esher, Surrey, 1866, *Hb. Wats.*

2561. C. VESICARIA × RIPARIA = × C. CSOMADENSIS Simonk. Near North Stoke, W. Sussex, with both parents, 1918, DRUCE.

*2565. C. LASIOCARPA Ehrh. Arisaig, Westerness, collected in 1903, but omitted to record. Still there in 1918, DRUCE.

*2570. C. HELODES Link. Symonds Bath, N. Somerset, at 1000 feet, Lady DAVY; Walridge Fell, Durham, HESLOP-HARRISON, in *lit.*

2573. C. DISTANS L. Blackpill, Glamorgan, WEBB.

2575. C. FULVA Host. Ide, S. Devon, Miss TODD; Great Bedwyn, Wilts, HURST.

2576. C. FLAVA L. Watton, W. Norfolk, DRUCE. Var. OEDOCARPA Anders. Clyne Valley, Glamorgan, WEBB.

2577. C. OEDERI Retz., var. ELATIOR And. Shapwick and Calcott, N. Somerset, 1918, Miss TODD.

2578. C. EXTENSA Good. Blackpill, Glamorgan, WEBB; [Staffs, *Ridge Rep.* 1917. Surely an error.].

2586. C. TOMENTOSA L. Sussex*, F.A.M., about 1840, *Hb. Tyacke.* Still at Chertsey, Surrey, Lady DAVY and Miss TULK; Somerford, Keynes, Sapperton, E. Gloster, TALBOT. Mr C. P. Hurst informs me that Mr H. H. Knight has found it within 8 miles of Cheltenham.

2600. C. ELATA × GOODENOWII. Stow Bedon, W. Norfolk, 1918, DRUCE.

2602. C. AQUATILIS WAHL. Plentiful by the Don at Alford, N. Aberdeen, Mrs WEDGWOOD and DRUCE.

2604. C. GOODENOWII Gay, var. RECTA A. & G. Near Woking, Surrey, a very caespitose form; Watton, W. Norfolk; Methuen, M.

Perth, DRUCE. Var. CHLOROSTACHYA (Reichb.). Blackpill, Glamorgan, WEBB. Var. STENOCARPA Kuk. Methuen, M. Perth, DRUCE.

2608. C. LEPORINA L., var. ARGYROLOCHIN Koch. Wrentham, W. Norfolk, 1917, HORWOOD.

2614. C. LEERSII Schultz. Bangor, Carnarvon; Bodorgan, Anglesey; Chichester, W. Sussex, 1917, DRUCE; Godalming, Surrey, EVANS; Trent, Dorset, Mrs DRUMMOND.

2614. C. MURICATA L. A tall form with interrupted inflorescence, Fetcham Downs, Surrey, 1918, BISHOP.

2615. C. PAIRAEI Schultz. Dartmouth, S. Devon*, 1918, Misses COBBE and DRUCE; Finchampstead, Berks, 1918, DRUCE; Chirk, N. Wales, DALLMAN.

2616. C. DIVULSA Stokes. Staffs, *Ridge Rep.* 1917.

†2634. PANICUM SANGUINALE L., var. CILIARE Trin. St Heliers, Jersey, GUITON, in *lit.*

†2635. P. ISCHAEMUM Schreber. In immense quantities over a large field near Pyrford, Surrey, Lady DAVY. Unless one saw it one could scarcely credit its abundance in over 30 acres of oats and potato ground. It occurred in sandy soil varying much in size but normally a prostrate plant. It was formerly known as *Panicum glabrum* or *Digitaria humifusa* Pers. It is distributed this year.

†2637. P. CAPILLARE L. Goring, Oxford, GAMBIER-PARRY; Pyrford, Surrey, Lady DAVY.

†2639. SETARIA VIRIDIS Beauv. Croft Castle, Hereford, Mrs ATHERLEY; Hereford, GAMBIER-PARRY; Staffs, *Ridge Rep.* 1917.

†2640. S. GLAUCA Beauv. Edenbridge, Kent, TALBOT; Byfleet and Pyrford, Surrey, A. B. COBBE.

†2641. S. PANICEA (L.) Schinz & Thell. (VERTICILLATA (L.) Beauv.). Meanwood, York, HORRELL.

†2656. Phalaris angusta Nees. Bedminster, Bristol, M. Cobbe.

†2658. Anthoxanthum aristatum Boiss. Sandy field, Wisley, Surrey, 1916, Britton; Staffs, *Ridge Rep.* 1917.

2673. Phleum pratense L., var. intermedium (Jord.). West Harnham, Wilts, Goddard; Kingston Bagpuze, Berks; Burpham, W. Sussex; Sutton Gault, Cambridge; Bristol, W. Gloster; Bridge of Allan, Stirling, Druce. This is the cultivated " Timothy " of Scotland where it is said to be always nodose rooted. The Scotch " Timothy " is preferred by many seedsmen. It is a question yet to be ascertained if its nodose character persists in cultivation. Var. nodosum (L.). Stow Bedon, W. Norfolk; Bodorgan, Anglesey; Bridge of Allan, Stirling, Druce. Var. armatum Druce. Awn 1-1.75 mm. long. Buness, Unst, Shetland, Tate.

†2676. P. Michelii All. Bristol, W. Gloster, Mrs Sandwith.

†2680. P. paniculatum Huds. Bristol, W. Gloster, in some quantity, Mrs Sandwith. An interesting reappearance of a very rare alien, whence it was first recorded by Hudson in the 2nd edition of the *Flora Anglica*, 1778.

2684. Agrostis alba L., var. major Gaud. Near Southampton, 1918, Rayner; Elliot, Forfar, 1916, Druce. Var. coarctata Hackel. Alford, N. Aberdeen, Druce. Var. stolonifera (L.). Teignmouth, S. Devon, M. Cobbe; Perth, Druce. Var. armata Celak. Cramond Midlothian, Fraser.

*2685. A. nigra With. Ledbury, Hereford, Bickham. See *Rep. B.E.C.* 255, 1917.

†2692. Polypogon littoralis Sm. Bristol rubbish heaps, W. Gloster, M. Cobbe; Galashiels, Selkirk, I. M. Hayward.

*2692. Calamagrostis canescens Druce (lanceolata). Withington Woods, E. Gloster, 1918, Greenwood.

2710. Deschampsia alpina R. & S. In beautiful condition in the " spout " of Lochnagar at about 3000 feet, Druce.

*2712. D. FLEXUOSA Trin., var. VOIRLICHENSIS Melv. Ben Nevis, Westerness, at about 3500 feet, DRUCE.

†2719. AVENA STRIGOSA Schreber. West Lavington, Wilts, Prof. SOMERVILLE; Beddgelert, Carnarvon; Alford, N. Aberdeen. DRUCE; Staffs, *Ridge Rep.*

2725. ARRHENATHERUM TUBEROSUM (Gilib.) Druce. Buckland Newton, S. Wilts. Tons of the tuberous roots carted off arable soil, GODDARD in *lit.*

2733. PHRAGMITES VULGARIS (Lam.) Druce, var. EFFUSA (A. & G.). Cothill, Berks; Tay-side, M. Perth, DRUCE. Var. PSEUDO-DONAX (Rabh.). Arun, near Burpham, W. Sussex, 1918, DRUCE. Var. FLAVESCENS (Cust.). Urswick Tarn, L. Lancs, PEARSALL.

†2737. CYNOSURUS ECHINATUS L. Waste ground, Cambridge. 1916, MARQUAND; Hunstanton, E. Norfolk, 1918, GAMBIER-PARRY; Kirton, N. Lincs, WOODRUFFE-PEACOCK.

2739. KOELERIA GRACILIS Pers. Stow Bedon, W. Norfolk. DRUCE.

2740. K. BRITANNICA (Domin). On upper chalk, Barnetby-le-Wold, N. Lincs, WOODRUFFE-PEACOCK in *lit.*

*2742. K. ALBESCENS DC., var. GLABRA DC. Cove, Kincardine. DRUCE.

*2746. CATABROSA AQUATICA Beauv. South Queensferry, West-lothian, 1906, M'ANDREW. Still there, July 1913, FRASER.

†*2758. POA CHAIXI Vill. Brooklands Avenue, Sale, Cheshire. Coll. G. A. HOLT; comm. C. BAILEY.

*2765. P. COMPRESSA L. Staffs, *Ridge Rep.* 1917.

2772. GLYCERIA FLUITANS Fr., var. PEDICELLATA (Towns.). Shepton Mallet, N. Somerset, 1918, Miss TODD. Doubtless *G. fluitans* × *plicata*.

*2774. G. Foucaudi (Hackel). Montrose, Forfar, 1916, Druce, teste Stapf.

2776. Puccianella maritima Parlat. (Glyceria), var. hibernica (Druce). Redbridge, Southampton, 1918, Miss Todd.

2783. Festuca sylvatica Vill. Arisaig, Westerness, Druce. Only given for Fort Augustus in *Top. Bot.* Melmerby, Cumberland, Mason.

2785. F. rubra L., var. grandiflora (Hackel). An anomalous form and perhaps a distinct variety, with narrow leaves, and large spikelets, Ely River, Glamorgan, 1915, Howarth. Var. pruinosa Hackel. Cove, Kincardine, 1918, Druce.

*2787. F. ovina L., var. supina Hackel. On serpentine, near Cabrach, N. Aberdeen, Druce. Var. paludosa Gaud. Staffs, *Ridge Rep.*

†2794. Bromus rigens L. (maximus). Topsham, Devon, 1918, Miss Todd.

†2803. B. unioloides H. B. K. Chilworth, S. Hants, Rayner; dock, Exmouth, S. Devon, A. B. Cobbe.

†2804. B. brizaeformis F. & M. Bristol, 1918, Mrs Wedgwood.

†2806. B. secalinus L., very fine specimens. Galashiels, Selkirk, I. M. Hayward.

2807. B. pratensis Ehrh. (commutatus). Corfe, Dorset, Druce; Mundesley, Norfolk, Horwood.

†2809. B. arvensis L. Railway bank near Newcastle, Durham, Heslop-Harrison.

†*2822. Lolium linicola Sond. Cold Brayfield, Bucks, Mason.

2824. L. perenne L., var. sphaerostachyum Masters. Chilworth, Surrey, 1918, Bishop, vide sp.

2828. AGROPYRUM PUNGENS R. & S. (TRITICUM PUNGENS Pers.). St David's, Fifeshire, 1910. Plants from St David's were so named in 1911 by Professor Hackel, who added the following remark :—" I cannot agree with Ascherson and Graebner in considering this a hybrid of *repens* × *junceum*. It is near to but not the same as *A. littorale* Rchb."—FRASER. I quite agree *A. pungens* is quite a good species—it hybridises with *repens* (× *A. Oliveri* Druce) and probably with *junceum*. DRUCE.

2830. A. REPENS Beauv., var. VAILLANTIANUM Schrank. Burpham, W. Sussex, 1918, DRUCE.

†2851. HORDEUM JUBATUM L. Guildford, Surrey, KENNEDY; Wellington College Station, Berks, DRUCE; Welbeck, Notts, GOULDING.

2851 (2). H. VIOLACEUM Boissier. Bradford, York, CRYER.

*2860. JUNIPERUS NANA Willd. (SIBIRICA Burgs.). Near Buck of Cabrach, N. Aberdeen, DRUCE.

2867. × EQUISETUM LITORALE Kühl. Rocky river, Hilltown, Mourne Mountains, R. LL. PRAEGER in *Ir. Nat.* 141, 1717. Claimed to be the second record for the British Isles but the author has overlooked its record for Somerset. It has also been found in N. Lincoln and W. Kent. There is no reference in the publication to the misidentification of *Glyceria festuciformis* from Co. Down on the occurrence of which and the so-called *Carex rhynchophysa* from Armagh [*C. inflata* var.] some ingenious theories of plant distribution were made.

2871. E. PALUSTRE L., var. POLYSTACHUM Vill. A form, under this, near Woking, Surrey, Lady DAVY and DRUCE.

2882. ASPLENIUM VIRIDE Huds. Cabrach, N. Aberdeen, Mrs WEDGWOOD.

2885. A. ADIANTUM-NIGRUM L. Cadny Church and in a place where it did not occur the previous year, N. Lincoln, WOODRUFFE-PEACOCK.

2889. ATHYRIUM FILIX-FOEMINA Roth. var. INCISUM Wats. Stow Bardolph, W. Norfolk, LITTLE.

2898. DRYOPTERIS SPINULOSA Kuntze. A form approaching *uliginosa*, East Sheen, Surrey, W. KEW; Scoulton, W. Norfolk, 1918, DRUCE.

2899. D. ARISTATA Druce. A form with the pinnae much less cut than usual, Scoulton, W. Norfolk; Arisaig, Westerness, 1918, DRUCE.

2902. D. MONTANA Kuntze. In very many localities in S. Glamorgan and abundant on millstone grit on Snear Moor, WEBB, in *lit.*

2908. PHEGOPTERIS POLYPODIODES Fée. The Glen, Peebles, DRUCE.

†2923. AZOLLA FILICULOIDES Lam. Birtley, Durham, with *Scirpus maritimus* in an inland station, HESLOP-HARRISON.

*2927. LYCOPODIUM COMPLANATUM L. Lochnagar, S. Aberdeen, 1918, DRUCE.

*2931. L. SELAGO L. On limestone rock, Prescelly Mountain, Pembroke, ARNETT.

*2933. NITELLA TRANSLUCENS Ag. Lough Mullaghderg, W. Donegal, BULLOCK-WEBSTER in *Ir. Nat.* 7, 1918.

*2942. TOLYPELLA GLOMERATA Leonh. It appeared in a pond near Cadney, N. Lincs, in 1918 (not there in 1917), WOODRUFFE-PEACOCK.

*2943. T. PROLIFERA Leonh. Between Creech St Michael and Durston, S. Somerset, MARSHALL.

2944. T. INTRICATA Leonh. Near Bristol, N. Somerset, Mrs SANDWITH. Twinstead, N. Essex, doubtless brought by water-fowl.

Although I know this pond well, which is on the estate of a friend of mine, I never saw *Tollypella* there till this spring and I have yearly examined it for aquatics, DRUCE.

2949. CHARA VULGARIS L., var. PAPILLATA Wallr. Llyn Coron, Anglesey, DRUCE.

2951. C. HISPIDA L., appr. var. HORRIDA Br. & Nordst. Goldend. Freshwater, Isle of Wight, 1867, R. TUCKER, in *Hb. Stratton.*

2955. C. ASPERA Willd. Lough Mullaghderg, W. Donegal. BULLOCK-WEBSTER in *Ir. Nat.* 1918. Var. SUBINERMIS Kuetz. Loch Leven, Fife, STRATTON.

2956. C. FRAGILIS Desv. Lough Mullaghderg, W. Donegal, BULLOCK-WEBSTER, *l.c.*

THE DATES OF PUBLICATION OF CURTIS'S "FLORA LONDINENSIS."

This important publication was issued in numbers each containing six plates and the dates of a great number of them were fixed approximately by W. A. Clarke (*Journ Bot.* 112, 1895) and B. Daydon Jackson and R. A. Pryor (*l.c.* 309, 1881). The numbers were issued at various dates, twelve of them forming a fasciculus. In all six of these fasciculi were published and they are usually to be found bound up in two volumes. My own copy is bound in the six fasciculi. Unfortunately too full directions were given by the publishers to re-assort the plates, a general index for each fasciculus being supplied. Clarke suggests that fasc. i. was completed by 1777, fasc. ii. 1777-9, fasc. iii. after October 1780, fasc. iv. 1781-3, fasc. v. from 1783-8, fasc. vi. 1791-8. Under *Glyceria procumbens* (*Rep.* 433, 1916) I lamented the fact that I had been unable to find a copy of the work bound up in the numbers as they were issued. This year, while engaged in searching for an old Hortus Siccus in Merton College Library at Oxford, I came upon ten unbound numbers of the sixth fasciculus in their original paper covers, but the covers bear no date. The plates were issued in this order—No. lxi. *Poa retroflexa*, *Chenopodium murale*, *Chaerophyllum temulum*, *Sisymbrium Nasturtium*. *Salix monandra*, *Datura Stramonium*. No. lxii. *Thlaspi arvense*, *Carduus palustris*, *Stellaria uliginosa*, *Caucalis infesta*, *Salix triandra*. No. lxii. *Hydrocotyle*, *Galium verum*, *Chrysanthemum segetum*, *Caucalis Anthriscus*, *Achillea Millefolium*, *Carduus arvensis*. No. lxiv. *Geranium parviflorum*, *Carex ventricosa*, *Urtica dioica*, *U. urens*, *Lathyrus sylvestris*, *Ornithopus perpusillus*. The last four plates are dated January 1, 1791, so that all the plants enumerated above were published before that date. No. lxv. *Aira caryophyllea*, *Trifolium arvense*, *Geranium dissectum*. March 1791 *Melissa*, *Nepeta*, *Anemome apennina*, *Primula acaulis*. No. lxvi. *Iberis nudicaulis*, *Festuca elatior*. December 1, 1791. *F. pratensis*, *F. loliacea*. December 1, 1791. *Leontodon hirtus*, *Ranunculus Flammula*. No. lxvii. *Scilla autumnalis*, *Hieracium umbellatum*, *Carduus polyacanthus*, *C. tenuiflorus*, *Valeriana officinalis*. *Primula officinalis*. This is the last number quoted by Sibthorp (*Fl. Oxon.* 1791) No. lxviii. *Melittis*. *Glaucium corniculatum*, *Orchis fusca*, *Veronica triphyllos*, *Saxifraga oppositifolia*, *Ophrys fucifera* (1794?). lxiv. *Cerastium pumilum*, *Ranunculus arvensis*, *Trifolium ochroleucum*, *Centaurea Cyanus*, *Antirrhinum Peloria* (1794?). *Helleborus viridis*. No. lxx. *Melica nutans*, *Salvia Verbenaca*, *Bromus diandrus*, *Trifolium scabrum*, *Aceras anthropophora*, *Galeopsis versicolor*. The last two numbers lxxi. and lxxii. are absent. The plants included in them are *Agrostis setacaea*, *Cerastium tetrandrum*, *Chenopodium rubrum*, *Cistus guttatus*, *Fumaria capreolata*, *Lathyrus Nissolia*, *Lobelia urens* (1798?), *Orchis bifolia*, *Poa procumbens* (1795?), *Primula farinosa*, *Pulmonaria maritima* and *Saxifraga Hirculus*. We therefore know that nine of these numbers containing 54 species were issued before the end of 1794. Four appeared in 1791, one, No. lxvi., in 1792, No. lxvii. probably in 1792 or 1793, Nos. lxviii., lxix., and probably lxx. appeared in or before 1794, No. lxxi., containing *Poa procumbens*, probably in 1795, and a long interval elapsed before No. lxxii., containing *Lobelia urens*, was issued in or about 1798. With regard to the priority of Curtis's name *procumbens* for the *Poa* a sidelight is thrown on it in Knapp's *British Grasses*, published in 1804 while the matter was fresh in recollection.

" This plant was first figured by Curtis under the name *procumbens* an epithet infinitely more expressive than that of Withering's." Having remained up to the sixth edition as *rupestris* in Withering's *Nat Arr.* the name was changed in the seventh edition of 1830 to *procumbens*, and the credit of discovering it is given to Curtis.

CLAVIS TO DEVONIAN SEDGES.

W. P. Hiern, F.R.S.

The following artificial key has been constructed from Mr F. C. Crawford's *Anatomy of the British Carices.* The distinguishing characters do not refer to the fruit or floral structure and in order to avoid the use of high microscopic powers the descriptions of the stomata are not given. The magnification necessary for the key is not more than forty diameters.

1. Stem roundly pentagonal .... *C. pulicaris* L.
Stem three-sided or round 2
2. Stem triangular, that is, with three flat faces 3
Stem trigonous, that is, with three convex faces, or roundly trigonous 15
Stem triquetrous, that is, with three concave faces 35
Stem round or roundish 39
Stem with one face flat, another convex, the third concave... *C. riparia* Curt.
3. Angles of the stem-faces sharp 4
Angles of the stem faces blunt 5
Angles of the stem-faces, one sharp and two round 6
4. Epidermis of the stem smooth 7
Epidermis of the stem rough .... *C. vesicaria* L.
5. Stem smooth 8
Stem rough 9
6. Stem rough .... *C. diandra* Schrank.
Stem smooth .... *C. paniculata* L., var. *simplicior* Anders.
7. Cells of the lower epidermis of the leaves small .... *C. disticha* Huds.
Cells of the lower epidermis of the leaves large .... *C. arenaria* L.
8. Transverse section of leaves gradually tapering to margins... *C. stricta* Good.
Tranverse section of the leaves narrowing from the middle of each half to the margins .... *C. rostrata* Stokes, var. *latifolia* Aschers.
Transverse section of the leaves equally thick throughout except the small necks .... *C. pilulifera* L.

9. Cells of the epidermis of the stem longitudinal............................ 10
Cells of the epidermis of the stem round.. 11
10. Midrib of the leaves prominent or evident........ 12
Midrib of the leaves small, hardly existing......................*C. divisa* Huds.
11. Margins of the leaves sharp.. 13
Margins of the leaves rounded ....*C. pendula* Huds.
12. Upper epidermis of the leaves without many papillæ...........*C. muricata* L.
Upper epidermis of the leaves with many papillæ. ....*C. Leersii* F. Schultz.
13. Angles of the stems all three blunt and rounded.............................. 14
Two angles of the stem very rounded, the third sharp.....................
.... *C. rostrata* Stokes, var. *latifolia* Aschers.
14. Section of the leaves gradually tapering to the tips..... ......*C. stricta* Good.
Section of the leaves equally thick, the tips sharp...*C. Goodenowii* J. Gay.
15. Stem smooth 16
Stem rough.................. 26
16. Transverse section of the stem rather undulating 17
Transverse section of the stem not undulating 18
17. Leaf-section with tapering tips ....*C. paradoxa* Willd.
Leaf-section with round, blunt tips................. ......*C. depauperata* Good.
18. The small vascular bundles in the stem round..... 19
The small vascular bundles in the stem oval............... 20
Some of the small vascular bundles in the stem oval and others round 24
19. Leaf-sections tapering to the margin........... ....*C. paniculata* L.
Leaf-sections equally thick throughout . ...*C. divulsa* Good.
20. Leaves more or less revolute.. 21
Leaves flat on each half..... ....*C. punctata* Gaud.
21. Leaves thin............. 22
Leaves thickening from the necks to the centre and decreasing to the margins..... 23
22. Epidermis of the stem with longitudinal cells................*C. axillaris* Good.
Epidermis of the stem with round cells...... . ... *C. sylvatica* Huds.
23. Stem very bumpy................ ....*C. flava* L., var. *lepidocarpa* Tausch.
Stem smooth, not bumpy.......... ...... *C. flava* L., sub-sp. *C. Oederi* Retz.
24. Margins of the leaves pointed ; midrib sharp ....*C. leporina* L.
Margins of the leaves rounded ; midrib rounded 25
25. Midrib of the leaves prominent.............. .. ..*C. pilulifera* L.
Midrib of the leaves small..................................*C. caryophyllea* Latour.
26. The small vascular bundles in the stem round... 27
The small vascular bundles in the stem oval 28
Some of the small vascular bundles in the stem round, others oval...... 34
27. Margins of the leaves sharp.. ...... *C. montana* L.
Margins of the leaves rounded................. ....*C. helodes* Link.
28. Tannin-cells in the stem, if present, empty.................................. 29
Tannin-cells in the stem and leaves with tannin 33
29. Margins of the leaves sharp 30
Margins of the leaves rounded or square 31

30. Cells of the upper epidermis of the leaves large..................*C. binervis* Sm.
Cells of the upper epidermis of the leaves small..................... ....
....*C. rostrata* Stokes and *C. vesicaria* L.
31. Midrib of the leaves prominent ; leaf-margins rounded.... 32
Midrib of the leaves small ; leaf-margins square....................*C. distans* L.
32. Epidermis of the stem with round cells.............*C. Hornschuchiana* Hoppe.
Epidermis of the stem with longitudinal cells..... ....*C. hirta* L.
33. Leaves of equal thickness ; no necks...............................*C. glauca* Murr.
Leaves at the central bundle in each half swelling tremendously.......
....*C. strigosa* Huds.
34. Margins of leaves tapering...*C. diandra* Schrank, var. *Ehrhartiana* Hoppe.
Margins of the leaves round...............................*C. caryophyllea* Latour.
35. Small vascular bundles in the stem round 36
Small vascular bundles in the stem oval.. 42
36. Hinge-cells, that is, water-cells in the centre of the leaves, only at or near the midrib.. 37
Hinge-cells extending a little beyond the midrib.................*C. canescens* L.
37. Leaves turning first inwards and then outwards ; hinge-cells prominent.. ....*C. vulpina* L.
Leaves pointing downwards at the margin ; hinge-cells not in relief... 38
38. Upper epidermis of the leaves without many papillæ...........*C. muricata* L.
Upper epidermis of the leaves with many papillæ......*C. Leersii* F. Schultz.
39. Stem smooth......... ....*C. pallescens* L.
Stem rough or irregular on the faces...................... 40
40. Midrib small...*C. acuta* L.
Midrib very large....................................... 41
41. Transfusion-cells in the stem and leaves very large...*C. Pseudo-cyperus* L.
Transfusion cells in the leaves not large but clearly visible..............
....*C. acutiformis* Ehrh.
42. Leaves rounded or knobby on the margin... 43
Leaves pointed on the margin................................... 44
43. The small vascular bundles in the stem round.........................*C. remota* L.
The small vascular bundles in the stem oval...........................*C. panicea* L.
44. Margins of the leaves pointed but bevelled from the lower to the upper face...... ....*C. stellulata* Good.
Margins of the leaves not bevelled 45
45. Leaves not crescent-shaped in section ; midrib present..................
....*C. Bœnninghauseniana* Weihe.
Leaves crescent-shaped in section ; midrib wanting......................... 46
46. The small vascular bundles in the stem oval; rhizome present...*C. filiformis* L.
The small vascular bundles in the stem round; rhizome absent. ......
....*C. extensa* Good.

The names now used for *C. rostrata* Stokes, *C. stricta* Good., *C. glauca* Murr. and *C. filiformis* L. are *C. inflata* Huds., *C. elata* All., *C. diversicolor* Crantz and *C. lasiocarpa* Ehrh.

ROBERT DICK, OF THURSO.

This working baker-botanist who discovered the Holy-Grass and *Deyeuxia neglecta* at Thurso was also an indefatigable worker at the geology of Caithness. His life is well and readably described in Smiles' volume. This year his name has been commemorated by having a memorial tablet affixed to the house in which he was born in 1811 at Tullibody near Alloa. His father was an Inland Revenue Officer. Dick as a boy was an apt scholar and at Menstrie, under the shadow of the Ochills, he began his nature study and collected stones and minerals. This did not appeal to his home authorities. He was apprenticed to a baker at Tullibody, and while delivering bread in the neighbourhood added to his botanical collections. He then went to Leith, Glasgow and Greenock, and in 1830 joined his father at Thurso. He was the friend of Hugh Miller and Sir Roderick Murchison, and assiduously collected fossils for them. The commemorative tablet was unveiled on September 21, 1918 by Dr B. N. Peach, whose father was an intimate friend of Dick. It bears this inscription "In this house was born, January 1811, Robert Dick, baker, Thurso, Botanist and Geologist, whose life, spent in the pursuit of Science amid many difficulties, is an inspiration and example." Dr Peach in his address described the salient topographical features of Caithness which have recently been so excellently described by Dr Crampton and also remarked upon its attractiveness as a field for the pursuit of geology and botany. Touching upon Dick's discoveries he pointed out and emphasised the notable service he has rendered to the world of Science by his rare collection of the remains of Old Red Sandstone fossil fishes which were embedded in the rocky shores of Dunnet Bay. Mr D. B. Morris made the principal speech, sketching Dick's life in a masterly way and touching in pathetic terms on his closing days of illness, pain, penury and solitude. It may be added that it was mainly through the exertions of Mr Morris, who is the Town Clerk and President of the Stirling Archaeological Society, that the scheme of commemorating Dick was brought to a successful completion. The gathering was presided over by the Rev. A. W. Scudamore Forbes, the Parish Minister of Alloa and Tullibody, to whose kindness we are indebted for the details of the meeting.

MISCELLANEOUS NOTES.

BOISSIER'S HERBARIUM. A la suite du décès de Madame C. Barbey-Boissier, ses six enfants ont l'honneur d'informer MM. les correspondants de L'Herbier Boissier qu'ils remettent les collections botaniques et la bibliothèque de cet Herbier en donation à l'Université de Genève. Ils ont pris leurs dispositions pour que tous ces documents demeurent accessibles aux savants suisses et étrangers, M. Gustave Beauverd, Consercateur de l'Herbier Boisser, étant attaché à cet effet dès le premier Avril 1918 au Laboratoire de Botanique de l' Université de Genève. Chambésy, Mars 1918.

THE NATIONAL TRUST FOR PLACES OF HISTÓRICAL INTEREST OR NATURAL BEAUTY, Report 1917-18. During the period covered by the Report the Trust has acquired by gift Kinver Edge in the heart of the Black Country which was presented by Mr Oliver Lee and is to be known as the Grosvenor Lee Memorial, Coombe Hill; 105 acres in the Buckinghamshire Chilterns presented by Lord and Lady Lee; Irby Hill adjoining Thurstaston Heath, Cheshire, given by Mr A. V. Paton; Keld Chapel, Cumberland, presented by Sir S. H. Scott; Howe's Ditch, Wicken Fen, Cambridge (purchased); Dryburgh Abbey, Roxburgh, the burial place of Sir Walter Scott, presented by Lord Glenconner; and Sir Thomas Acland has placed under the Trust between seven and eight thousand acres on Exmoor. It may be added that £1000 is still needed to complete the purchase of Lyveden New Building in Northamptonshire.

JOHN 'RALFS' HERBARIUM. It may be worth while putting on record that the collection of plants, about 1500 in number, made by Dr Ralfs have come into the possession of our member, Mr H. H. Goddard. He just saved the papers from destruction as they were being used to wrap up groceries.

NATIONAL MUSEUM OF WALES, Eleventh Annual Report, 1918. We learn with regret that Lieut. C. M. Green, Assistant Keeper of the Botanical Department, was killed in action in November. Our member, Miss Vachell, F.L.S., has generally supervised the Department which has been enriched by the generous gift of Herbarium specimens from Mr Charles Bailey. The Library now contains 15,000 volumes, among recent acquisitions being the second edition of Gerard's *Herbal*. We are delighted to find that a permanent memorial to our late member, Dr Vachell, has been erected in the shape of a bronze mural tablet in the New Museum Buildings which was designed by Sir W. Goscombe John, R.A.

Hearty congratulations are offered to our member, Mr CARLETON REA, on being elected honorary member of The British Mycological Society, an honour shared with only two others—Saccardo and Bordier.

BOOKS IN PREPARATION.

We regret to hear that Arnold Lees' YORKSHIRE FLORA and the FLORA OF SALOP are for the time held up owing to the lack of financial support. The writer's FLORA OF BUCKINGHAMSHIRE and NORTHAMPTONSHIRE and the second edition of the FLORA OF OXFORDSHIRE cannot at present be printed, so that additions are still valued.

In the press and shortly to appear THE ADVENTITIOUS FLORA OF TWEEDSIDE by Miss I. M. HAYWARD and G. C. DRUCE. This will contain the descriptions of about 350 wool-aliens from that area, and a list of all the adventitious species of that area. It will be illustrated with about 80 plates. Price, 7/6.

Revision of Pritzel's ICONUM BOTANICARUM INDEX LOCUPLETISSIMUS. The Royal Horticultural Society having decided to publish a new edition of this valuable work the compilation has been commenced at Kew under the honorary editorship of Dr O. Stapf, F.R.S., Keeper of the Library and Herbarium. It is estimated (according to the *Gard. Chron.* January 25, 1919, p. 42) that the new work will include about 250,000 references and cost at least £3500, possibly £4000. The original *Index* was compiled by Dr George Augustus Pritzel chiefly during his occupation of the post of Curator of the Archives and Library of the Royal Academy of Sciences at Berlin and contains " upwards of eighty-six-thousand representations of Phanerogamic plants and Ferns." In the compilation over 370 works were consulted, many consisting of several to numerous volumes, and their figures quoted throughout. The title page is dated 1855, and the Preface December 15, 1854. The references fill 1184 columns, each column being separately numbered and two appear on a page. The arrangement is alphabetical for both the genera and the species under each genus. Synonyms are not given, and no revision either of identification or of nomenclature was attempted, but the name used by the author responsible for the plate or figure is alone quoted. In 1866 a supplement of 291 columns, with 6 columns of further additions, was published, and included references down to the year 1865. A type-written copy of references to important plates published between 1866 and 1894 is in the Kew Library, and has served as a supplement to Pritzel's work for that period. Since 1894 down to the present time additions have been made, in ink, to this copy. If it is found feasible to include cross-references to synonyms and to check and, if necessary, revise the nomenclature of all the quotations the value of the work would be greatly increased, but the labour would be enormous and the expense and size of the new volumes would be considerably added to.

W. B. TURRILL.

CORRECTIONS, &c.

Report 1917—

p. 6. H. R. and A. H. Evans should be H. A. Evans.

p. 36, &c. Tower-le-Moor should be Tower o' the Moor.

p. 48, line 11. Insert sub-var. *brevidentatum* Beauv., Scot. 1.

p. 76, line 11. Transfer " which gives its name," &c., from Flax to Hemp, five lines lower down.

p. 83. Dr Schroeter wishes it to be understood that his pupil, J. Karl Amberg, is the real author of *Der Pilatus*.

p. 237, line 17. For " *curta* " read " *nemorosa*."

p. 238, line 11. For "North Lancashire" read "Cumberland."

p. 241, line 31. For " assimilates " read " simulates."

Report 1915—

p. 186, line 22. COCHLEARIA ANGLICA × OFFICINALIS = C. BRIGGSII Druce in *Rep B.E.C.* 187, 1915 is antedated by × C. HOLLANDICA T. Th. Henrard in Fedde *Rep.* n. 331-6, 221, December 1916.

PERSONAL NOTES.

Mrs Adams, F.L.S., 14 Vernon Road, Edgbaston, and Miss Frower, Stansteadbury, Ware, Herts. are painting British plants. Would members who are willing to assist in supplying specimens kindly let them know? The latter specially needs British *Rubi*.

F. J. Hanbury, Esq., Brockhurst, East Grinstead, is anxious to have seeds of rare British species. He will defray all expenses.

W. Norwood Cheesman, Esq., J.P., The Crescent, Selby, York, will be glad to receive or exchange specimens of *Mycetozoa*.

Rev. T. Stephenson, Epworth, Aberystwith, wishes to have living specimens of *Liparis*, *Spiranthes* species, *Corallorrhiza*, *Helleborine atroviridis*, and any hybrids.

Mr G. C. Druce, Yardley Lodge, Oxford, would like fresh specimens of the Marsh Orchids, stating their precise habitat, also fresh Orobanches.

Mr T. A. Dymes, F.L.S., Carthona, West Drayton, Middlesex, wants ripe capsules of *Cephalanthera*, *Herminium*, *Spiranthes*, *Neottia*, *Goodyera*, *Helleborine latifolia* and *Orchis mascula*, *Morio*, *pyramidalis* and *ustulata*.

SUPPLEMENT TO REPORT OF BOTANICAL SOCIETY AND EXCHANGE CLUB FOR 1918,

BY

WILLIAM HARRISON PEARSALL.

THE BRITISH BATRACHIAN

In attempting a revision of these most interesting plants, I am concerned in the first place rather to make out clearly the different forms found growing in these islands than to fit them to names or descriptions of plants growing elsewhere. In other words, " we must get our Botany right first " before endeavouring to deal adequately with nomenclature. Any possible value, therefore, that this preliminary paper possesses, lies in the fact that it aims at a more complete and accurate knowledge of our British forms, and, in lesser degree, at clearing-up some initial confusion in regard to their names.

Collectors would do well to remember that these plants afford the best characters when there are 2 or 3 heads of mature fruit upon the stems and, usually, flowers still present. Notes upon the depth of the water, its rate of movement (if any), the nature of the substratum, and what other forms grow in the vicinity, are always of assistance in determination.

I am greatly indebted to many botanists who have sent specimens for examination, and in a special degree to Messrs Jas. Groves, G. C. Druce, W. P. Hiern, and C. Bailey for their generous help in this and other directions.

I have added a clavis for assistance in running a species down, but as it is based upon purely artificial distinctions it must be used with much discretion. Its hard and fast divisions do not occur in Nature and are merely relative, and not absolute, in their accuracy.

In determination too much reliance should not be placed upon any single character, but the full description should be consulted and the balance of evidence afforded by all the characters carefully ascertained before arriving at a decision :—

SHORT KEY TO THE VARIOUS FORMS.

1.	Floating leaves absent	2
	Floating leaves present	14
	Submerged leaves absent	12
2.	Peduncles normally much exceeding the leaves	3
	Peduncles normally shorter than or equalling leaves	8
3.	Leaf-segments long, collapsing or parallel	4
	Leaf-segments short, diverging	6
4.	Flowers large	5
	Flowers small	var. *Bachii.*
5.	Plant robust, peduncles stout, leaf-segments numerous and long	*R. pseudo-fluitans.*
	Plant smaller, peduncles slender, leaf-segments fewer and shorter	var. *minor.*
6.	Leaves very small (a sixpence will cover one), sub-circular, segments radiating like wheel-spokes	*R. circinatus.*
	Leaves larger	7
7.	Leaves sub-circular or densely tufted. Flowers large, carpels hairy	*R. sphaerospermus.*
	Leaves often sub-circular, variable. Flowers small, carpels glabrous —plant usually maritime	*R. Baudotii*, f. *marinus.*
8.	Flowers large	9
	Flowers small	11
9.	Peduncles short	*R. heterophyllus*, var. *submersus.*
	Peduncles long	10
10.	Peduncles stout, leaf-segments long, stout, sub-parallel. Receptacle nearly glabrous	*R. fluitans.*
	Peduncles slender, leaf segments shorter, more slender, not parallel. Receptacle hairy	*R. pseudo-fluitans*, var. *minor.*
11.	Leaf-segments weak, collapsing. Carpels usually glabrous. Receptacle conical	var. *Drouetii.*
	Leaf-segments short, rigid, diverging. Carpels hairy. Receptacle usually globular	*R. trichophyllus.*
12.	Receptacle hairy. Leaves as in *R. tripartitus.* Stipules conspicuous. Carpels with prominent beak	*R. lutarius.*
	Receptacle glabrous	13
13.	Petals scarcely exceeding calyx. Leaf-segments broadest at base	*R. hederaceus.*

Petals about twice calyx. Leaf-segments narrowest at base... *R. Lenormandi.*

14. Peduncles long, normally much exceeding the floating leaves........... 15

Peduncles shorter than, or scarcely exceeding the floating leaves..... 19

15. Flowers large—often very large... 16

Flowers much smaller—often small... 18

16. Peduncles stout... 17

Peduncles slender...f. *elongatus.*

17. Submerged leaves with numerous very long segments. Floating leaves few, often truncate.. *R. pseudo-fluitans.*

Submerged leaves with much shorter and fewer segments. Floating leaves many, nearly circular or reniform........................... *R. peltatus.*

Submerged leaves as in *peltatus*, floating leaves semicircular—truncate ....f. *truncatus.*

18. Plant robust, peduncles stout, much arched in fruit, often with a double curve. Stamens short....................................... *R. Baudotii.*

Plant weaker, peduncles slender, straighter. Stamens longer....f. *confusus.*

19. Flowers large.. 20

Flowers small.. 23

20. Submerged leaves with short, rigid, divergent segments (as in *R. trichophyllus*)—sub-circular in outline and regularly disposed ....var. *radians.*

Submerged leaves with longer segments (*not* as in *R. trichophyllus*)—less regular both in outline and arrangement......................... 21

21. Floating leaves nearly circular—carpels hairy............................ 22

Floating leaves reniform, tripartite, with segments having nearly straight margins. Carpels normally nearly glabrous......var. *triphyllus.*

22. Segments of floating leaves much rounded, petioles long and slender. Submerged leaves with more or less rigid, divergent segments. Flowers few and large. Peduncles long.....................var. *floribundus.*

Segments of floating leaves normally wedge shaped. Peduncles short. Submerged leaf segments usually weak........................ *R. heterophyllus.*

23 Flowers small. Floating leaves very variable and irregularly divided ....f. *Godronii.*

Flowers very small, or minute and inconspicuous. Floating leaves regularly tripartite.. 24

24. Flowers minute, petals about 3 mm., sub-acute. Submerged leaves few and distant, with extremely fine capillary segments... *R. tripartitus.*

Flowers small, petals up to 6 mm. rounded at apex. Submerged leaves very rarely present (segments flattened). Carpels with prominent terminal beak.. *R. lutarius.*

ALTERNATIVE KEY.

FLOATING LEAVES ABSENT.

I. Peduncles normally much exceeding the leaves.

A. Leaf segments long, collapsing.

1. Flowers very large.
    - (a.) Plant robust. Leaves with very numerous stout segments forming long coarse tapering tassels; peduncles stout ....*R. pseudo-fluitans.*
2. Flowers large or of medium size.
    - (b.) Plant more slender. Leaves with fewer, shorter, and more slender segments. Peduncles slender. Carpels usually hairy ....var. *minor.*
3. Flowers small.
    - (c.) Leaf segments very few, stout, sub-parallel. Receptacle and carpels nearly glabrous ,. ....*R. fluitans*, var. *Bachii.*

B. Leaf segments short, rigid, diverging.

- (d.) Leaves usually small (may be covered by a sixpence), short stiff segments radiating in one plane like the spokes of a wheel. Peduncles often 5 or 6 times leaves. Carpels glabrous ....*R. circinatus.*
- (e.) Leaves larger, short, rather rigid segments diverging in every direction and forming sub-spheres—or slightly diverging and forming short dense truncated tufts. Peduncles stout. Flowers large. Carpels hairy.......... .... *R. sphaerospermus.*
- (f.) Leaves with short diverging segments. Flowers small. Carpels glabrous ....*R. Baudotii*, f. *marinus.*

II. Peduncles normally shorter than, or equalling, the leaves. (Flowers arranged below in order of decreasing average size).

A. Flowers large.

- (g.) Leaf segments long, stout, sub-parallel, relatively few in number. Stamens short. Receptacle nearly glabrous... ....*R. fluitans.*
- (h.) Leaf segments not nearly so long, slender, collapsing. Long slender peduncles equalling or slightly exceeding the leaves. Receptacle hairy ....*R. pseudo-fluitans*, var. *minor.*
- (i.) Leaf segments robust, shorter, usually sub-collapsing into a coarse brush or tuft. Flowers smaller. Peduncles short.................. ...... *R. heterophyllus*, var. *submersus.*

B. Flowers smaller.

- (j.) Leaf segments weak, collapsing. Flowers rather larger than in (k.). Carpels normally glabrous or nearly so. Receptacle conical...... ...*R. trichophyllus*, var. *Drouetii.*
- (k.) Leaf segments rigid, diverging. Carpels hairy. Receptacle usually globular, but may be sub-conical or even conical........ ....*R. trichophyllus.*

SUBMERGED LEAVES ABSENT (OR RARE).

Aerial leaves reniform. Carpels glabrous.

I. Receptacle glabrous—no submerged leaves.

(a.) Leaves with shallow angular or rounded segments broadest at the base ; flowers very small, petals scarcely exceeding calyx............ .... *R. hederaceus.*

(b.) Leaves with deeper rounded segments narrowest at the base ; flowers much larger (about ½ in. diameter) ; petals twice calyx.......................................*R. Lenormandi*

II. Receptacle hairy—submerged leaves rare, or absent.

(c.) Leaves as in robust *R. tripartitus.* Submerged leaves with distinctly flattened segments, divergent. Flowers minute. Stipules conspicuous. Carpels with a prominent beak. (South of England).......................*R. lutarius.*

BOTH FLOATING LEAVES AND SUBMERGED LEAVES PRESENT.

I. Peduncles long, tapering, much exceeding the floating leaves.

1. Flowers large, petals contiguous.

(a.) Floating leaves large, sub-peltate, reniform or nearly circular, divided nearly to the middle into much rounded segments.. ..*R. peltatus.*

(b.) Floating leaves approximating to semi-circular, sub-truncate at the base ....f. *truncatus.*

Floating leaves extremely variable. A form having very long slender peduncles exceeding the attenuate petioles ....f. *elongatus*

(c.) Floating leaves few, very large, shaped as in (a.) or (b.). Flowers very large, on very long peduncles. Submerged leaves with very long segments—a running water form... ....*R. pseudo-fluitans.*

2. Flowers much smaller.

(d.) Floating leaves much more deeply divided than in (a.), into 3 nearly sessile or even stalked segments : leaves often transitional or absent. Peduncles stout, much arched, often with a double curve. Carpels nearly or quite glabrous. Stamens not usually exceeding the mature carpels.......................................*R. Baudotii.*

(e.) Floating leaves usually smaller and thinner in texture than in (d.). Peduncles much more slender and normally straighter. Stamens exceeding head of carpels in most cases...f. *confusus.*

II. Peduncles shorter than, or scarcely exceeding, the floating leaves.

(f.) Floating leaves sub-circular and sub-peltate, or reniform, with long slender petioles and much rounded segments. Submerged leaves with rigid divergent segments. Flowers large. Receptacle spherical...*R. peltatus.* var. *floribundus.*

(g.) Floating leaves normally nearly circular, but very variable, deeply divided into wedge-shaped segments. Submerged leaves weak and sub-collapsing. Peduncles short, with sharp curve at base......... ..*R. heterophyllus.*

(h.) Floating leaves sub-circular, tripartite, with radiant sinuses. Submerged leaves sub-circular in outline and regular in disposition, with short rigid divergent segments as in *trichopyllus*. Carpels hairy... ..var. *radians*.

(i.) Floating leaves usually reniform, tripartite, with sub-sessile cuneate segments having nearly straight margins. Submerged leaves not like those of *trichophyllus*. Carpels normally nearly glabrous.......... ....var. *triphyllus*.

(j.) Resembles (h.) when well developed, but commonly has smaller, thinner, and glabrous floating leaves, less regularly divided, often nearly semi-circular or with stalked segments. Flowers small ....f. *Godronii*.

(k.) Leaves small, deeply trifid. Submerged leaves few, distant, with truly capillary segments. Flowers minute, petals about 3 mm., 3 veined, rather acute at the apex, very fugacious. (Cornwall and Co. Cork).. .*R. tripartitus*.

(l.) Leaves as in robust *tripartitus*. Submerged leaves rarely present, with distinctly flattened divergent segments. Flowers very small, petals up to 6 mm., rounded at apex. Carpels with prominent terminal beak ....*R. lutarius*.

1. R. FLUITANS Lamarck *Fl. France* iii., 184, 1778. Gr. et Godr. *Fl. Fr.* i., 25. Koch in Sturm *Deutschl. Fl.*, fasc. 67, t. xiv.

A large and robust plant of rapid streams. Stem very long (5-6 metres or more, at times), branched. Floating leaves rarely present, variable. Submerged leaves with long petioles, about twice trifurcate, with stout, very long (3 in. to 10 in.), linear forked sub-parallel segments. Stipules broadly lanceolate, half-adnate, with large rounded auricles. Flowers large, petals often 10 in number (sometimes two-seriate), many-veined, imbricate, persistent. Stamens numerous, very short, rarely long. Receptacle usually nearly or quite glabrous, occasionally somewhat hispid; globular or sub-ovoid. (In the flowering and earlier fruiting state the receptacle is slightly hispid—especially at the base. Subsequently, however, this hispidity is more or less lost, owing to the deciduous nature of the hairs, but rarely does the receptacle become really glabrous.). Fruiting peduncles stout, tapering, usually shorter than (often equalling or slightly exceeding) the leaves. Carpels glabrous or slightly hairy.

2. Var. BACHII (Wirtg.), a slender form having submerged leaves relatively short, sub-sessile or shortly stalked, with fewer and shorter segments occasionally obviously tapering at the apex. Flowers much

smaller, usually with 5 broadly-obovate petals. Fruiting peduncles longer than the leaves. Receptacle and carpels not quite glabrous.

3. Var. CAMBRICUS (Ar. Benn.) may, perhaps best come here. A small, extremely slender plant having the habit of *R. fluitans* but with shorter leaves often having very few segments and " flowers very small and rarely fertile." (Lyn Coron, Anglesey.).

4. R. CIRCINATUS Sibthorp *Fl. Oxon.* 175. 1794, excl. syn. L. *R. divaricatus* Koch, non Schrank.

A plant of canals, ponds and slow streams. Easily recognised by its very characteristic submerged leaves, small (usually a sixpence will cover one), with short, stiff segments radiating in one plane like the spokes of a wheel; circular in outline, usually surrounding the stem. No floating leaves. Flowers rather large for the size of plant; petals many-veined (7 to 9), persistent, yellow at the base. Stamens many, exceeding carpels. Fruiting peduncles long (up to 5 or 6 times leaves), tapering. Receptacle sub-globular, hairy. Carpels glabrous or with a few hairs, ± compressed upward, with a long beak. Stipules narrow, adnate, not auricled.

f. ASPERGILLIFOLIUS (Hiern) may, perhaps, be best placed here as being " intermediate between *trichophyllus* and *circinatus.*" It differs from the latter in having somewhat smaller flowers, shorter peduncles and laterally placed submerged leaves. The receptacle is ovate or almost elliptical, and the carpels glabrous or slightly hairy. (Rescobie, Forfar.).

5. R. TRICHOPHYLLUS Chaix in Villars *Hist. Pl. Dauph.* i., 335. 1786. *R. divaricatus* Schrank, non Koch.

A well-marked species but differing greatly in the size of its flowers and submerged leaves. Floating leaves very rarely present (tripartite with cuneiform segments often stalked and fan-like or laciniate and transitional). Stipules $\frac{1}{2}$ to $\frac{2}{3}$ adnate, large, rounded, auricled. Submerged leaves with more or less rigid and divergent segments, sub-circular in outline or bush-like, commonly short. Flowers small as a rule but not invariably so, with non-contiguous fugacious petals—up to twice as long as the sepals—white with yellow claw. Stamens few, often about 12 (9-15, Rouy) exceeding the carpels. Receptacle usually globular, often ovoid or sub-conical, rarely conical—sometimes varying much in the same plant—normally hairy. Fruiting peduncles short (2 to 5 cm.), thick, not exceeding the leaves at time of flowering, but may do so slightly in fruit; most curved near the base, the rest usually straight, not or only slightly tapering, often bifurcate at the apex. Carpels normally hairy, rarely glabrous.

6. Var. RADIANS (Revel). At the annual meeting of the British Association in September 1865, Mr Hiern gave notice of *R. radians* Revel as a British plant, gathered in June 1864 at Silverdale, W. Lancs. Revel first described the species in *Act. Soc. Linn. Bordeaux* xix., 120, fig. i., 1853, and later in *Renonc. de la Gironde* 8 et icone. A. Boreau cites the latter description (in full) in his *Flore du Centre de la France* ed. 3, ii., 11, 1857. Among Mr W. P. Hiern's mss. is a letter from Boreau (6/7/1865) having reference to a British specimen of *R. radians* Revel, submitted to him for examination. Of this he says "the foliage is absolutely the same as that of a plant I possess so named by Revel himself." So far as my own examination of authentic continental specimens goes, it confirms the claim of Mr Hiern for *R. radians* Revel as a British plant. Babington (*Manual* ed. 9, 6) and Hooker (*Student's Flora* ed. 3, 6) consider the plant as a form of *R. trichophyllus* with floating leaves. Moss (*Journ. Bot.* lii., 117, 1914) follows Rouy and other Continental botanists in giving it varietal rank. At present I accept this view, with the reservation that further observation and comparison may warrant us in agreeing that the plant is worthy of the specific rank assigned to it by Revel. In this connection the question arises, "Do the young carpels of var. *radians* essentially differ in shape from those of *R. trichophyllus*?" So far as my own experience goes the mature carpels of *R. trichophyllus* are more or less flattened at the top and have a very short and stumpy lateral apiculus. Those of var. *radians* are more usually very shortly narrowed at the apex and have a somewhat longer and more centrally situated beak. The young fruits of var. *radians*, however, are commonly tapering above into a "bottle-neck," which largely disappears later but often leaves the convex shoulders well-marked. I shall be pleased to receive further evidence on this point.

A large plant having the facies of robust *R. trichophyllus*. All leaves are usually ± circular in outline, symmetrical in segment and regular in arrangement. Floating leaves rather thick, coriaceous.

often hairy beneath and on the petioles; normally sub-circular, deeply divided into cuneate segments separated by radiant straight-sided sinuses, often extremely narrow, rarely very wide, segments sometimes laciniate and petioled, even transitional. Basal sinus large and deep, or narrow as the others. Submerged leaves dark-coloured (as a rule), sub-circular in outline, regularly disposed, with short, ± rigid, diverging segments like those of *R. trichophyllus*; smaller than those of var. *triphyllus*, more compact, and much more uniform in shape and arrangement. Flowers medium-sized, much larger than those of *trichophyllus* and approximating to those of *heterophyllus*. Fruiting peduncles very short (often about 2 cm., with lower longer), much shorter than the floating leaves they may subtend, rigid, strongly recurved below, nearly straight above, often at right angles to the stem. Receptacle spherical or ovoid, densely hairy with long hairs. Carpels hairy. Differs from Hiern's 12, *triphyllus* in habit, floating and submerged leaves, and hairy carpels. Typical specimens are those from (1) Silverdale, W. Lancs, 15/6/65, W. P. Hiern, (2) Thame, Oxon, May 1915 [Ref. O. 815], G. C. Druce, (3) Nailsea Moor, N. Somerset, 19/6/1900, and (4) Marsh ditches, Yatton, N. Somerset, 13/6/1900, J. W. White.

7. f. *Godronii* (Hiern) seems nearest to *R. radians*, and in some cases difficult to separate from it except by the weaker submerged leaves, which are always less regular (both in outline and disposition) than in that species. Floating leaves when well developed nearly circular but less regularly divided and usually smaller than those of *radians*. More often, however, the floating leaves are somewhat semi-circular in outline and truncate at the base, or with stalked and variously fissile fan-like segments. The submerged leaves may have either weak and sub-collapsing, or rigid and divergent segments. In the latter case the leaves are always more irregular in form and arrangement than in var. *radians*. Peduncles shorter than, or about equalling, the leaves. Receptacle more or less rounded (occasionally rather long), and hairy. Carpels hairy as a rule, or nearly glabrous. Flowers commonly small, with petals up to 6 mm. (*R. Godronii* Grenier in F. Schultz *Arch.* 172, 1850, name only.).

8. Var. DROUETII (F. Schultz). Differs from the preceding in its more slender habit, weak and collapsing submerged leaves, slightly larger flowers and less hairy carpels. Little reliance can be placed

on colour in separating these plants, although *Drouetii* growing in clear water is usually lighter green than *trichophyllus* under similar conditions, but it may be dull greyish-green, often olive, or even madder (in peat). Stem slender, no floating leaves, submerged leaves very flaccid and forming a narrow pencil when dried. This character is often masked by the segments being encrusted with lime, mud, or slime; and varies too, with age. Flowers rather small, but seldom as small as those of *trichophyllus*. Stamens few—often about 10—variable in length, sometimes not exceeding the head of carpels. Receptacle usually conical. Fruiting peduncles slender, short, normally not exceeding the leaves, sometimes bifurcated at the apex. Carpels inflated above, blunt and rounded, often with a few hairs, sometimes with many. (*R. Drouetii* F. Schultz ex Godron, in Grenier and Godron *Fl. France* i., 24, 1848.).

9. R. HETEROPHYLLUS Weber in Wigg. *Prim. Fl. Holsat.* 42, 1780. (*R. heterophyllus* Babington in *Ann. Nat. Hist.* ser. 2, xvi., 393, 1855, non Hooker fil.).

A very variable species, having floating leaves normally nearly or quite circular, but sometimes less so and then resembling those of *peltatus*. Divided more than half-way into cuneate-approximate segments—typically wedge-shaped but may be rounded—variously fissile on the outer edge. Sometimes the segments are nearly sessile, or even stalked, and transitional leaves are frequently present. Submerged leaves with segments long, weak and collapsing. Flowers large with broadly cuneate-obovate 7-9 veined petals, not contiguous except in well-developed specimens, persistent—from 6 mm. to 1 cm. in length. Stamens many, exceeding the head of carpels. Receptacle conical (sometimes long and narrow), or spherical, hairy. Fruiting peduncles short, ± slender, slightly or not tapering, usually shorter than the floating leaves but occasionally about as long; not as a rule much curved above but sharply recurved at the base as the fruit ripens. Carpels glabrous, slightly hairy on the top, or "with numerous strong bristles."

10. Var. TRIPHYLLUS (Hiern) Wallroth p.p. Floating leaves deeply divided into 3 sub-sessile cuneate segments with nearly straight or slightly hollowed margins and the outer edge usually cut into numerous deep divisions, often mere linear threads. Normally less

completely circular than those of *radians* and with wider sinuses (the basal one often very wide) and frequently hairy below. Submerged leaves larger than in *radians*, more loosely trifurcate with divaricate segments, therefore less compact and more irregular in outline—not *trichophyllus*-like. Flowers of medium size, not large, petals about 8 × 5 mm., not contiguous, persistent. Stamens not numerous, about equalling head of carpels. Receptacles slightly longer than broad, ovoid, hairy. Fruiting peduncles scarcely tapering, short, not exceeding leaves, ultimately recurved and then patent. Carpels narrowed above, with rather long lateral beak, hairy or nearly glabrous (those of Wallroth's plant are " glaberrimis nitidis.").

11. Var. SUBMERSUS Bab. A characteristic plant of salt marshes and tidal drains: very variable. No floating leaves. Submerged leaves with segments usually long, robust and sub-collapsing, forming ± dense tassels; or shorter and diverging to form irregular bushes. Flowers medium-sized (petals about 9 mm.), not large; often quite small (petals 4-6 mm. on even large specimens.). Stamens usually many, sometimes few in small flowers; exceeding the head of carpels. Receptacle ovoid. Fruiting peduncles short (upper 2.5 cm. to 3 cm.) usually shorter than or equalling the leaves, but the lowest may be much longer and exceeding the leaves. As in *Drouetii* the peduncles are occasionally bifurcate at the apex. Carpels slightly hairy, nearly or quite glabrous. In my opinion many robust forms of *Drouetii* and *trichophyllus* have been hitherto wrongly referred to this variety.

12. R. PELTATUS Schrank *Baier Fl.* ii., 103. *R. aquatilis* var. *peltatus* Koch in Sturm *Deutsch. Fl.* fasc. 67. f. 7.

Normally a vigorous species producing floating leaves profusely in standing water. Floating leaves long stalked, reniform or suborbicular, divided nearly half-way into three obovate segments (the central much smaller than the lateral) which are frequently again rather less deeply divided into two, making the leaf appear five-fid. Forms occur in which these five segments are large, rounded, subequal, and sub-entire—f. *quinquelobus* (Koch). The segments of the typical *peltatus* leaf are much rounded at the base but in f. *truncatus* nearly straight. Submerged leaves with rather rigid diverging segments. Flowers large (up to 1½ in. in diameter with petals over ½ in. long !), petals broadly obovate-cuneate, contiguous, persistent.

varying in size up to 15 mm. by 11 mm., sometimes very numerous, twelve or more. Stamens many, exceeding the head of carpels. Receptacle relatively small in size and spherical in shape. Fruiting peduncles long, tapering, normally exceeding, often only equalling, and occasionally shorter than the leaves. These varying lengths not infrequently occur on the same plant. Carpels usually hairy, only rarely glabrous.

13. Var. FLORIBUNDUS (Bab.). Much nearer to *peltatus* than to *heterophyllus*, in my opinion, and extremely variable in aspect. Most commonly a robust plant, but slender forms occur which must undoubtedly be referred to this variety. Floating leaves normally sub-circular or circular (but may be reniform), sub-peltate, divided more than half-way into rounded segments, which are sometimes imbricate. Petioles characteristically very long and slender—rarely stout. Submerged leaves moderately long, with rather rigid diverging segments. Flowers usually few and large, with petals not contiguous, persistent; and numerous long stamens. Stigma often narrowly oblong. Receptacle spherical. Fruiting peduncles shorter, not or very slightly tapering, about as long as the leaves. Carpels very blunt at the top, and usually hairy, rarely glabrous.

f. TRUNCATUS (Koch). Floating leaves little more than a semicircle in outline, with the base truncate in a nearly straight line; feebly (or not at all) cordate. Sometimes the basal opening is inconspicuous and the base of the leaf curved upward from the petiole.

f. ELONGATUS (Hiern). A slender form having, essentially, very long (6-10 cm.) slender peduncles exceeding the attenuate petioles. Floating leaves extremely variable, sometimes having five segments, often like small *truncatus*. Carpels hairy.

14. R. PSEUDO-FLUITANS Baker & Foggitt, *Rep. Thirsk Bot. Exch. Club*, 1864. *R. penicillatus* Bab.

The name *pseudo-fluitans* has been responsible for much confusion, and in dealing with it we are faced by a curious difficulty. If we retain it as that of a species we clearly cannot cite it as of Syme, who in *E.B.* iii., 1863, puts it under the species *R. aquatilis* sub-sp. *peltatus* as ?var. *pseudo-fluitans*—querying as a synonym *R. pseudo-fluitans* Newb. mss. Indeed it is doubtful whether Syme's problematic variety should even be quoted as a variety under his name, althouth among his herbarium specimens is one marked in pencil "*pseudo-fluitans*" under *peltatus*. Whatever Newbould had to do with the form under discussion, I think it is generally agreed that as he did not publish any description, his name may be omitted from the literature of the subject. In the *Report of the Thirsk Botanical Exchange Club* for 1864 [published in 1865, and subsequently quoted in *Journ. Bot.* iii. 114, 1865] Messrs Baker and Foggitt quote the name as that of a species, and give what I think may fairly be regarded as a characteristic description within the meaning of the Laws of Botanical Nomenclature 1867-8. The provision as to a Latin diagnosis being necessary does not apply in this case, but it might be questioned whether the report of an Exchange Club is a sufficiently "public" medium. However, as the description was repeated in the *Journ. Bot.* this hypothetical difficulty is removed. The original description is as follows:—" *R. pseudo-fluitans* Newbould. In the new edition of *Eng. Bot.* Mr Syme (who places it under *R. peltatus* along with *R. floribundus* Bab.) says of this, ' It is a very remarkable plant and may be a distinct sub-species, as the Rev. W. W. Newbould inclines to think. Prof. Babington unites it with *R. heterophyllus*, with which it agrees in the weak, collapsing leaves, but in other respects it approaches *R. peltatus*, or rather *R. floribundus*, and is very possibly only a state of that plant induced by growing in running water. In habit it closely resembles *R. fluitans*, but has the segments of the leaves shorter, much less rigid, and less parallel; the stamens longer than the head of pistils, and the receptacle hispid.' Mr A. G. More sends us a supply of specimens from the neighbourhood of Dublin, and writes, ' The plant seems as well marked by distinctive characters as any other of the British Batrachian *Ranunculi*, except *fluitans*, *circinatus*, *tripartitus*, *hederaceus* and *cœnosus*. To the general habit and appearance of *R. fluitans*, it joins the floating leaves of *R. peltatus*. Its submerged leaves are long and very flaccid, whip-like and much coarser than in any of the others except *fluitans*. In the streams of Ireland it appears to be not unfrequent, and to take the place which *R. fluitans* occupies in England.' " To this long extract from the *Thirsk B.E.C. Report* it is necessary to add further details from Syme's only partially quoted description (*E.B. l.c.*):— " Submerged leaves tassel-like, with segments very long and rather weak, collapsing. Floating leaves very rarely present (resembling those of *peltatus* or *floribundus*. Peduncles slightly narrowed upward, equalling or exceeding the leaves. Receptacle spherical."

Over half a century has elapsed since these descriptions were written and during that period the plant has been frequently distributed. I have been privileged to examine large numbers of authenticated specimens of it in the collections of Messrs J. Groves, G. C. Druce, W. P. Hiern, and C. Bailey—among others—and as a result, submit the following description:—" A well-marked and readily recognised form, with the habit of a gigantic *truncatus*. Normally a very robust plant with a fat, succulent stem. Floating leaves present or absent. When present—which is frequently (by no means rarely) the case—they resemble those of very large *truncatus* or—less commonly—of *peltatus* or *floribundus*. Petioles very long, up to 6 in. in some cases. Often there are no floating leaves, especially in English specimens. Submerged leaves sub-sessile—sometimes apparently stalked when at the end of a short branch—simulating those of *R. fluitans* but with segments shorter (commonly up to 4 in.), more numerous, much less rigid and less parallel; coarser, and collapsing into dense tassels or (more rarely) sub-parallel and whip-shaped. (In some Irish specimens with floating leaves, the submerged leaves have segments over 6 in. in length). Flowers very large, with broadly obovate-cuneate persistent petals. Stamens numerous and exceeding the head of carpels. Mature carpels normally very bristly and very blunt. Peduncles very long (up to 6 in. or more), thick, equalling or exceeding the leaves. (Not infrequently in specimens with floating leaves and flowers as described above, peduncles occur which are much shorter than the leaves). Usually not tapering for the greater part of the length but only near the top. Receptacle spherical and very hairy."

15. Var. MINOR nov. comb. (*pseudo-fluitans* Hiern p.p.). A much more slender plant than the preceding, no floating leaves, submerged leaves variable, having segments sometimes short (3-5 cm.) and ± divergent—especially in standing water—at other times long (6-10 cm.) and sub-collapsing (usually in rivers). Fruiting peduncles long (up to 10 cm.), always relatively slender, equalling or exceeding the leaves—not infrequently twice as long or even more. Flowers much smaller than in the type. Carpels hairy or nearly glabrous. Receptacle hairy.

16. R. SPHÆROSPERMUS (Hiern).

A well-marked and "characteristic plant of some of our S.-E. county rivers," and also of some tidal waters. The uniform absence of floating leaves under conditions when they should be readily and abundantly produced is, I think, important, and appears to readily separate *sphærospermus* from any form of *peltatus*. To me it occupies an intermediate position between *peltatus* and *Baudotii*—indeed some of its forms might readily be mistaken for f. *marinus*, but for their larger flowers and more hairy carpels. For the present I must reserve my opinion as to its possible identity with *R. sphærospermus* Boiss. and Blanche, but there is no doubt it is extremely near that species. The British plant is normally very dark in colour, having a stem more or less stout, often succulent and fat. Floating leaves absent; submerged leaves uniform in shape, regularly disposed, with short, rather rigid diverging segments forming sub-spheres or dense tufts. These characters of the submerged leaves readily distinguish this species from any form of *pseudo-fluitans*—the segments of the submerged leaves in *sphærospermus* are much shorter, more numerous and far more divergent than in that species, giving the leaf a sub-circular outline in many cases, and in others a shortly and densely tufted appearance. In this connection it is interesting to recall Boissier's original description (*Rep. B.E.C.* 7, 1914) "foliis uniformibus omnibus in lacinulas filiformes breves rigidulas undique divergentes divisis," and the fact that in Boissier's type specimen (No. 1105) which Mr W. P. Hiern has seen, the leaves are small and "globose in outline." Flowers few, large, petals 12 mm. or more, not usually contiguous. Stamens numerous, long. Receptacle globular, hairy. Fruiting peduncles stout (often thick), long (usually 2 in. to 2½ in.) exceeding the leaves, curved below in fruit. Carpels hairy, very inflated and rounded outside. In giving *R. sphærospermus* specific rank, I do so on account of its strong individuality and the difficulty of putting it under any other species. It has been often confounded with var. *submersus*, but differs from that in its larger flowers, shorter leaf-segments and fruiting peduncles normally twice as long.

17. R. BAUDOTII Godron *Essai in Mém. Soc. Roy. Nancy*, 21, fig. 4 (1839) 1840.

A very distinctive species usually maritime in these islands but not invariably found in brackish water. Normally a robust plant with a broad stem and floating leaves somewhat resembling those of *peltatus* in shape, but (on an average) smaller, much more deeply divided—into three nearly sessile or even stalked segments, more uniform in size, the central relatively larger, the lateral with fewer crenatures than in *peltatus*. The floating leaves are often transitional—divided into linear threads 1 mm. or more in width—or entirely absent. They vary greatly in size—a specimen from "Burnham-in-Crouch, Essex 16/6/94, H. Groves," has floating leaves 4 cm. in diameter. The petioles are usually slender and strongly contrasted with the thick peduncles. Submerged leaves with rigid, markedly divaricate capillary or linear segments. Flowers of medium size or small—much smaller than those of *peltatus*, as a rule. Petals usually less than 10 mm. in length. Stamens numerous, shorter than, or equalling the head of carpels. Receptacle when mature ovoid-conic, longer than broad, sometimes long-conic; more or less hairy. Fruiting peduncles very long (5-10 cm.). stout, tapering, usually much exceeding the leaves, strongly arched below (or throughout), often with a double curve. Carpels nearly or quite glabrous—occasionally a few odd bristles.

18 f. MARINUS (Fries). Merely a submerged form of R. *Baudotii* destitute of floating leaves. Usually a robust plant with a fat and succulent stem, but occasionally slender. Submerged leaves with short, rigid diverging segments—often the leaves are sub-circular in outline and regularly disposed. Flowers usually small (petals about 7 mm.); in robust specimens, medium-sized. Fruiting peduncles long, exceeding leaves—sometimes very long, even 12-14 cm. ! Normally stout, but sometimes slender. Receptacle and carpels as in type. Stamens shorter than head of carpels.

19. f. CONFUSUS (Godron). Differs from *R. Baudotii* in being normally a more slender plant, with long peduncles less stout and less curved than in that species—often very slender and nearly straight. Stamens usually well exceeding the head of carpels. The character of the carpels as being "narrowed upward" is difficult or impossible to make out, and therefore of little value. Many plants so labelled cannot be separated from *R. Baudotii*, in my opinion.

20. R. TRIPARTITUS DC. *Icon. Pl. Gall. Rar.* i., 15, t. 49, 1808.

Stem 1-5 dm., extremely slender but comparatively strong, simple or slightly branched. Floating leaves bright green and shining when fresh, forming a rosette on the surface of the water ; small—often very small—symmetrical, with long (3-5 cm.) and very slender petioles; deeply and regularly divided into three cuneiform segments separated by relatively wide sinuses with nearly straight sides. Segments very regular in outline—with 3 or 4 rounded crenatures—central segment usually as long as the lateral and only slightly smaller, with three rounded crenatures or (in very small leaves) entire. Submerged leaves few, distant, extremely slender ; when normally developed having remarkably fine, truly capillary, segments—yet usually more or less divergent but sometimes completely collapsing. Stipules normally well-marked, even conspicuous; delicate, transparent, with large auricles; upper with free or nearly free rounded ends. Flowers minute and inconspicuous. Petals minute (3 mm.) oblong, rather acute at the apex, equalling or scarcely exceeding the calyx, very fugacious. Fruiting peduncles very slender, usually shorter than or equalling the leaves, not or slightly tapering, ultimately recurved. Receptacle very small, roundish, hairy. Carpels few, obovate, inflated in the middle, slightly compressed at the top, shortly mucronate at the side, very rugose, glabrous. So far this species has only been reported from stations in E. and W. Cornwall, and Co. Cork—in these islands.

21. R. LUTARIUS Bouvet in *Bull. Soc. Angers* for 1871, 96, 1872. *R. lutarius* Bouvet fide H. & J. Groves in *Journ. Bot.* xlv., 452. 1907. *R. tripartitus* Auct. Brit. Form *intermedius* (Hiern) in *Journ. Bot.* ix., 67, 1871, excl. syn. Knaf. *Batrachium intermedium* Nyman. *Syll. Fl. Europ.* 175. 1854-5. *Batrachium lutarium* Revel in *Act. Soc. Linn. Bordeaux* xxv., 413, t. 4. 1865.

A much more robust plant than the preceding, with a much-branched stem and floating leaves somewhat resembling those of *R. tripartitus* but larger, less deeply divided into broader segments having markedly rounded edges. Floating leaves up to 1 in. wide, reniform or three-fourths circular, divided into 3 large symmetrical cuneate-obovate segments, central usually only slightly less than lateral, broad at the top (with three semi-circular crenatures), narrowed below. Each lateral segment (usually with four similar crenatures) separated from the central by a narrow sinus. Submerged leaves usually absent, rarely present, then few in number having rigid segments distinctly flattened, of an appreciable width and more or less diverging. Usually there are some transitional leaves present also. Stipules large, well-developed and conspicuous. Flowers very small for so robust a plant, with small narrow oblong-obovate pinkish or white petals up to twice as long as the sepals; when well-developed 6 mm. long, but usually less. Stamens very few (6-10) about equalling the head of carpels. Fruiting peduncles usually much shorter than the leaves, ultimately recurved. Receptacle more or less hairy. Carpels unequally obovate, much inflated, regularly and strongly transversely wrinkled, keeled, with a prominent terminal beak (lateral or nearly central); glabrous. Has been found in Cornwall, Devon, Sussex, Surrey, S. Hants, and Anglesea.

22. R. LENORMANDI F. Schultz in *Flora* xx. (ii.), 726, 1837. *Batr. Lenormandi* Fries *Sum. Veg. Scand.* i., 139, 1846, ex Nyman.

Stem normally robust, floating. Floating leaves very variable in size, usually larger, more rounded and crenate than in *R. hederaceus*; orbicular-reniform, not spotted and as a rule only slightly divided (rarely deeply) into three very rounded cuneiform segments narrowest at the base, with broad rounded crenations. Flowers up to ½ in. in diameter with narrow oblong petals (5-6 mm.) not nearly contiguous, up to twice as long as the sepals, with white claw. Receptacle glabrous, very rarely with a few hairs. Carpels more numerous than in *R. hederaceus*, unequally obovate, often acuminate at the top with a more or less curved beak; glabrous.

23. R. HEDERACEUS Linn. *Sp. Pl.* 556, 1753. *R. hederaefolius* Salisb. *Prodr. Stirp.* 373, 1796. *Batr hederaceum* S. F. Gray *Nat. Arr. Brit. Pl.* ii., 721, 1821. Dumort. *Prodr. Fl. Belg.* 127, 1827.

Stem creeping and rooting. Leaves broadly reniform (usually with semi-lunar black patches), divided into 3-5 shallow, more or less angular segments broadest at the base and usually entire. Not infrequently the segments are somewhat broadly rounded and the leaves simulate those of *R. Lenormandi.* Stipules narrower and more adnate than in that species. Flowers very small with petals scarcely exceeding the sepals, three-veined, not contiguous, with white claw. Receptacle glabrous or rarely with a few hairs. Carpels normally rounded at the top and laterally mucronate—those of *R. Lenormandi* are usually more numerous, more often shortly acuminate at the top and with a perceptibly curved beak. The carpels of both species are commonly glabrous.

R. OMIOPHYLLUS Tenore *Fl. Neapol.* iv., 338, 1830, seems to be merely a floating form of this species.

SUPPLEMENT.

Botanical Society & Exchange Club of the British Isles.

Additions to the Berkshire Flora.

G. Claridge Druce.

Twenty-one years have rolled by since the *Flora of Berkshire* was published, and notwithstanding that ten years of strenuous work have been lavished on the exploration of the county yet, as one expressed in the preface, 'it must be borne in mind that however minute and assiduous the research of a botanist in such a case may be, finality can never be attained since only a small portion comparatively of the actual surface of the ground comes within his observation, and that only for a short time.' Moreover I then gave a list of 31 species which were such as might with some reasonable expectation be found in the county. It is gratifying to be able to announce that seven of these have been discovered.

In the Flora of 1897—

The Plants native to Berkshire were given as ...		893
Plants which are Denizens only		45
Colonists		56
		994
Species of erroneous or uncertain record ...	11	
Extinct species	4	
Plants of casual occurrence or adventitious ...	199	
		214
		1208

33 species have been erroneously recorded, and about 400 named varieties and forms and 70 hybrids had also been included.

Since that date among the more interesting species which have been discovered are—*Cardamine bulbifera, Draba muralis, Viola epipsila, Dianthus deltoides, Cerastium pumilum, C. tetrandrum, Chrysosplenium alternifolium, Senecio viscosus, Hieracium praealtum, Campanula persicifolia, Scrophularia alata, Orobanche picridis, Mentha rotundifolia, Prunella laciniata, Ajuga genevensis* (new to Britain), *Euphorbia platyphyllos, E. Esula, Orchis praetermissa* (new to science), *Cyperus fuscus, Zannichellia gibberosa, Carex montana, C. lepidocarpa, C. diandra, C. Pairaei, Koeleria britannica, Poa irrigata,* and *Festuca heterophylla.* In addition many micro-species of the genus Viola, Rubus, Rosa, Hieracium and Euphrasia have been found. On the other hand *Fumaria muralis* and *F. Bastardi* are misnomers, and *Tunica prolifera* is destroyed.

At the end of 1918 the county census was as follows :—

Native plants, additional	49+893	= 942	
Denizens (*Ulmus hollandica, stricta*)	2+45	= 47	
Colonists (*Draba muralis, Senecio viscosus, Juncus tenuis, Matricaria suaveolens, Azolla, etc.*)	12+56	= 68	
	994	1057	
Less	3	1	
	991		1056
Doubtfully recorded species	11		10
Probably extinct (3 refound, 1 gone)	4		2
Adventitious plants	109+199	=308	308
	214	320	1376

Total 1363, extinct and errors, 11 ; over 500 varieties, 80 hybrids are also recorded. *Inula Helenium, Teucrium Scordium, Orchis Simia* and *Asarum europaeum* have been refound since 1897.

Among the helpers I have to thank are—Miss E. Armitage, Dr. A. Ashby, Miss Beales, Mr. F. A. Bellamy, Mrs. Bentall, Prof. T. H. Bullock, Rev. H. D. Butler, R. Cardew, Mrs. Chorley, Mrs. Climenson, Mr. F. Comyns, Mrs. Hautvile Cope, Lady Davy, Rev. E. Ellman, Mr. J. G. Everett, H. J. Evans, H. P. Fitzgerald, Countess Fortescue, Miss Fry, Mr. T. Gambier Parry, Lieut. P. M. Hall, Miss Haldane, Miss M. Hazel, Mrs. Hayden, Rev. L. Hamerton, Messrs. J. W. Higgins, Holliday, R. H. Hooker, C. P. Hurst, A. Bruce Jackson, Rev. C. B. de Jersey, Miss King, Miss Kirk, Mr. L. V. Lester-Garland, Mrs. Lindsay, Miss Lindsay, Mrs. Lightfoot, Rev. E. S. Marshall, Mr. H. W. Monckton, Miss E. Morland, Rev. Æ. Murray, Mr. V. E. Murray, Mr. H. Napier, Misses Nield, Niven, Mr. Osmond, Prof. J. Percival, Lieut. H. C. Porter, Mr. Ross, Miss Ridley, Mr. Clement Reid, Rev. H. J. Riddelsdell, Mr. Stanton, Dr. F. W. Stansfield, Rev. F. W. Stone, Dr. Willoughby Smith, Rev. W. H. Summers, Miss Todd, Mr. J. R. W. B. Tomlin, F. Tufnail, Miss Vachell, Messrs. C. F. Vincent, J. H. Vince, Miss Walker, Messrs. A. Wallis, Waterhouse, E. D. Watkin, and Prof. York Powell.

Papers on the Berkshire Flora have appeared in the Journal of Botany for 1905, 1910, &c., and numerous notes in the Reports of the Ashmolean Natural History Society of Oxfordshire and those of the Botanical Society and Exchange Club of the British Isles. A few notes have been obtained in the examination of the Herbaria of Professor Babington, the National Herbaria at Kew and the British Museum. To the Rev. H. J. Riddelsdell I owe the notes on Bicheno's Herb. at Swanage, and the words 'Roman Silchester' attached to a record signifies that seeds or fruits of the species have been observed by Mr. Clement Reid in the excavations of that place. An asterisk * signifies an addition to the county list. This sign † denotes that the plant is adventitious in the county.

One ought to mention that the number of new species is swollen by the separation of certain micro-species or the elevation of a few plants from a lower to a higher grade. The question arises as to whether such plants as *Prunella laciniata, Salvia pratensis, Euphorbia Esula, Silene nutans*, &c., owe their origin to recent importation with foreign seeds, or whether they are local native plants which have been overlooked. I can speak with some degree of positiveness as to the gradual change which is taking place in our surface flora. This is not always due to man and his operations, that is not directly. It may be quite outside his influence. To such natural causes as seeds distributed by wind-current, or water-borne, or even conveyed in the crops of birds, or plants and seed brought by aquatic birds to outlying pieces of water, or possibly adherent to bird plumage or claws, we owe some of our species and the spread of many.

The extension of *Crepis taraxacifolia* over the county in the last forty years is an example. Its first record was made for the county by me, in 1881, from the Maidenhead railway, and the individuals in the county at that time were probably less than a hundred, now it exists in millions. It may quite possibly have been the plant recorded as *C. foetida* by G. G. Mill from Bisham in 1843, but hitherto I have not been able to prove it. Many of the *Hieracia* now recorded were certainly not in their present place at that time. Can we owe *Euphorbia Cyparissias, Campanula persicifolia, Illecebrum, Ajuga genevensis, Scirpus maritimus*, &c., to wind- or bird-borne seeds? It seems not improbable. *Cyperus fuscus* and *Azolla* are almost certainly bird-conveyed species.

Dependent upon the operations of man are *Coronopus didymus, Lepidium ruderale, Juncus tenuis, Matricaria suaveolens, Senecio viscosus* and *squalidus*, all of which seem likely to extend their area in Britain; just as *Veronica Tournefortii* has spread over it in less than a century.

3. *Thalictrum flavum* L. 4 Kennet banks, *Bicheno.* Thatcham, H. *Weaver.* Fobney meadows, Reading, *Rev. W. H. Summers.* Fruits in Roman Silchester.

Var. *sphaerocarpum.* Betn. Suleham and Pangbourne, *V. Murray.*

8. *Anemone Pulsatilla* L. In flower on May 29, 1910. An early reference is 'The Pasque flower abounds on the sheep downs just above Streatley in Berks,' *Gilbert White's Diary,* April 5, 1769.

9. *A. Nemorosa* L. Var. *purpurea* DC. intensely dark at 4 Hawkridge.

* Var. *caerulea* DC. 4 Hawkridge Wood, *R. H. Hooker*, 1915.

†11. *A. apennina* L. 3 Compton Wood, 1918, *Miss Fry.*

16. *Adonis annua* L. 3 Beenham, in garden ground, *A. Wallis.*

17. *Myosurus minimus* L. 2 Field near Bagley Wood, *H. Napier.* 4 Pingewood, *V. Murray.* Near Thatcham.

38. *Ranunculus trichophyllus*, Chaix. 1 near Newbridge. 4 near Grazeley, Padworth. Var. *radians*, Revel, Farley Hill.

39. *R. Droueti*, Loddon, *A. B. Jackson.*

40. *R. heterophyllus*, Weber. 5 Farley Hill.

41. *R. peltatus*, Schrank, most luxuriant and with very large flowers, 3 near Frilsham, 1915. See B.E.C. Rep. 312, 1915.

30. *R. sceleratus* L. and 24. *R. Flammula* L. Seeds in Roman Silchester. Var. *ovatus Pers.* 2 Foxcombe Hill, *T. B. Cartwright.*

20. *R. acris* L. Var. *Boraeanus* (Jord.) 4 Welford.

22. *R. bulbosus* L. Var. *brachiatus* (Schlech.) 4 Boxford.

23. *R. Lingua* L. Seeds in Roman Silchester. 1 Near Buckland, *Dr. C. Shadwell.* 2 Long Bridges, *H. Baker.* 3 Yattendon, *Waterhouse.* 4 Wilderness, Kintbury, *C. P. Hurst.*

19. *R. repens* L. Seeds in Roman Silchester. Var. *erectus* DC 5 Loddon Bridge.

28. *R. sardous*, Crantz. Roman Silchester; also *var. *inermis,* i.e. without tubercles, *C. Reid.*

32. *R. parviflorus* L. Roman Silchester. 2 Sandford, *Miss Niven.* 5 Park Place, *Stanton.*

48. *Caltha palustris* L. Roman Silchester, var. *Guerangeri* (Bor.) 1 Cumnor.

51. *Helleborus viridis* L. Var. *occidentalis* (Reut.) Druce. 2 Hendred, 1859, *Gaunt.* 3 ? Chevening, *Bicheno.*

52. *H. foetidus* L. 3 Betn. Streatley and Aldworth, *Murray.*

54. *Aquilegia vulgaris* L. 4 Grazeley.

†60. *Delphinium Ajacis* L. 2 Cothill, 1907-9, West Hendred, *Mrs. Hayden.* 5 Cookham.

*63. *D. Consolida* L. 2 Cothill. Alien.

†68. *Aconitum Napellus* L. 4 Welford Park, quite naturalised, *Osmund.* The var. *anglicum.*

†71. *Paeonia officinalis* L. 5 Bisham Wood, in a clay pit, one plant, *Wallis*. To this rather than *P. corallina* doubtless belong the other Berkshire records.

72. *Berberis officinalis* L. 2 Dry Sandford, Pusey, Near Abingdon, Cothill, Wantage. 4 Beenham, *Summers*.

77. *Castalia alba Wood*. 5 First record 'at Twiford in ye river grows *Nymphaea flore albo* plentifully,' *Dillenius*, July 7, 1726. Newbury, *Bicheno*.

†79. *Papaver somniferum* L. Riverside near Clifton Hampden, abundant on railway between Didcot and Cholsey. 3 Bradfield, *Murray*.

*80. *P. Rhoeas* L. Var. *caudatifolium* (Timb.). 2 Wootton, Boar's Hill. 3 Pangbourne. 5 Ambarrow.

*Var. *Hoffmannianum Kuntze*. 2 Wootton. 3 Upton, Blewbury.

81. *P. dubium* L. Var. *collinum* (Bogen.), Hinksey.

82. *P. Lecoqi*, Lam. 2 Didcot, Boar's Hill. 4 Pinge Wood, *Murray*.

83. *P. Argemone* L. Roman Silchester.

84. *P. hybridum* L. 2 Cherbury Camp.

*93. *Eschscholtzia Douglasi*, Walp. Alien. Abingdon racecourse.

†101. *Capnoides lutea*, Gaertn. Alien. First record underneath edge of kerb, Aldermaston Station, *Gard. Chron.* 303, 1874, Theale.

†100. *C. solida*, Gaertn. 2 Besselsleigh.

102. *C. claviculata*, Druce. 3 in a hedge bordering King's Copse, Clay Hill, near Stanford Dingley, *Wallis*.

107. *Fumaria Boraei*, Jord. *Var. *muraliformis* Clav. (the *F. muralis Fl. Berks*, teste Mr. Pugsley). 5 Earley, Blackwater. 2 Hinksey (*Fl. Berks* as *F. confusa*).

111. *F. officinalis* L. Roman Silchester. The *scandens* of *Fl. Berks* is for the most part the more recently described var. *elegans* Pugsley.

114. *F. parviflora*, Lam. *Var. *acuminata*, Pugsl. 3 Streatley, Lowbury, Moulsford.

130. *Barbarea arcuata auct.* 5 near Shiplake in Berks.

†131. *B. intermedia*, Bor. 2 Challow. 3 Basildon.

133. *Arabis hirsuta*, Br., above Compton.

131. *A. glabra*, Bernh. (*perfoliata*, Lam.). 3 Bradfield, *Sheppard*. Woodley, *Summers*. 5 Twyford.

142. *Cardamine pratensis* L. A pure white-flowered form in the Loddon meadows. '*Flore pleno*' in great profusion in a meadow adjoining Beenham, *Johns* in *Gard. Chron.* 562, 1859.

143. *C. amara* L. 3 Sulham, *Weaver*. 4 Sandford Mill, *Summers*.

*148. *C. bulbifera*, Crantz. Bisham Woods, *Rev. C. B. de Jersey* in *Journ. Bot.* 85, 1879.

†150. *Lunaria annua* L. Alien. Hinksey, *Bellamy*, 1914.

†157. *Alyssum incanum* L. 2 Abingdon. 4 Reading. 5 nr. Sonning, *Summers*.

*158. *A. maritimum* Lam. Alien. Abingdon racecourse as the *var. *viride.* 3 Pepper Lane, Reading, *Wallis* (casual).

*162. *Draba muralis* L. Wytham woods with *Solanum nigrum, H. Napier,* 1910, probably introduced with ash saplings, but I have been unable to find from what nursery they were obtained. Lord Abingdon told me they were originally planted nearer the Abbey and removed to the present site. A very interesting addition to the *Flora.*

164. *Erophila praecox,* Stev. 2 Shillingford, *Miss Todd.*

†176. *Hesperis matronalis* L. 3 Sulham, *Summers.* 4 Shinfield, *Wallis.* 5 Sandford Bridge.

183. *Sisymbrium Sophia* L. Abingdon. 4 Thatcham, *Bicheno,* 1812. Reading.

184. *S. altissimum* L. Alien. 1 in some quantity of gravel dredged from river near Lechlade, 1912. Abingdon. 3 Tidmarsh, *Murray.* Moulsford, *Miss Neild,* Reading railway ballast. 5 Crowthorn, *Monckton.* Well. Coll. railway.

185. *S. orientale* L. Alien. *Var. *stenocarpum* (R. & F.), Cothill. Alien.

†188. *S. Irio.* L. 4 Newbury, *F. Comyns.*

†189. *S. officinale,* var. *leiocarpum* (Jord.). 2 Boar's Hill. 4 Hungerford *Miss Todd.*

†198. *Erysimum repandum,* Hojer. Cothill.

†200. *Conringia orientalis,* Dum. 4 Padworth. 5 garden ground, Reading, Shinfield Road allotments, plentiful, *Wallis.* Wellington College.

202. *Camelina sativa,* Cr. First record, Easthampton Park, growing in the corn, *Miller, Gard. Dict.* 1768. Abundant in clover field, Cothill, 1912. 3 Streatley, *Gambier Parry,* 1914.

†208. *Brassica Rapa* L. Var. *Briggsi* Wats. 1 Wytham. 2 Cothill.

†205. *B. oleracea* L. *forma.* Ilsley Downs, in arable field.

215. *Brassica nigra,* Boiss (*sinapioides*). 1 near Faringdon, Buscot, Eaton Hastings. Shrivenham. 2 Uffington.

217. *B. alba* Boiss. Roman Silchester.

227. *Diplotaxis muralis* D.C. 2 Marcham, *Miss Lindsay.* Cothill, Shippon. 3 and 4 abundant on railway near Reading, etc. var. *Babingtoni* (Syme). 2 Radley.

233. *Coronopus didymus,* Sm. Aldermaston, *Dr. Willoughby Smith,* 1904. 5 Windsor, *Everett.* Clewer, *Monckton,* 1917.

234. *C. procumbens,* Gilib. Roman Silchester.

†237. *Lepidium Draba* L. 2 nr. Oxford, Cothill, Cholsey, Steventon, Lockinge. 4 Enborne Road, *Jackson.* 5 Shinfield Road, &c., *Wallis.*

*239. *L. perfoliatum* L. Alien. 4 Newbury, 1899, *Miss Beales.* Wallingford, *J. S. Huxley.*

†240. *L. ruderale* L. 2 Abingdon. Abundant, Reading, *Wallis* and *Perceval.* Windsor, *Everett.*

249. *Thlaspi arvense* L. Roman Silchester.

252. *Iberis amara* L. Hinksey, *Mrs. Lightfoot*, 1856.

†253. *I. umbellata* L. Alien. Radley.

254. *Teesdalia nudicaulis*, Ait. 4 Burghfield Common, *Murray*.

†256. *Isatis tinctoria* L. 4 Alien, Templeton. One or two specimens among clover, *Summers*.

†258. *Vogelia paniculata*, Hornem. (*sagittata*). Alien. Wellington College.

*250. *Myagrum perfoliatum* L. Alien. Abingdon, 1918, *Gambier Parry*.

*251. *Soria syriaca*, Desv. Alien. Cothill, 1908.

†262. *Bunias Erucago* L. Alien. Cothill.

†263. *B. orientalis* L. 2 Garford, *Miss Todd*. Betn. Cholsey and Moulsford.

*268. *Rapistrum rugosum*, All. Alien. 2 Abingdon. 3 Reading.

*269. *R. Linnaeanum*, B. & R. Alien. 2 Cothill. Abingdon.

*270. *R. glabrum*, Host. Alien. Abingdon.

*283. *Reseda stricta*, Pers. Alien. Wytham Mill, see *Bot. Exch. Club Rep.* 212, 1906.

288. *Helianthemum Chamaecistus*, Mill. A form with very pale yellow petals, 2 Cherbury, also others with dark orange petals.

293. *Viola silvestris*, Lam. em. *var. *punctata* Druce, Bagley, 1912. 3 Basildon, Unwell, betn. Pangbourn and Theale, *P. M. Hall*.

296. *V. canina* L. c. var. *ericetorum*. 2 Frilford, *P. M. Hall*.

*V. *canina* × *Riviniana*. 2 Henwood.

298. *V. odorata* L. Roman Silchester.

299. *V. hirta* L. *Var. *pinetorum*, Wiesb. 1 Wytham.

*Var. *inconcinna*, J. Briq. 3 Streatley.

*Var. *Foudrasi*, R & F. 3 Streatley. Compton.

*Var. *propera*, Gillot. 3 Streatley, 1896. Unwell, *Hall*, 1910.

*301 (2). *V. epipsila*, Ledeb., near the Three Firs, Burghfield. First published, *Druce* in *Bot. Exch. Rep.* 610, 1910, but noticed there 18 years before.

*V. *ruralis*, Jord. 2 Wootton, Boar's Hill, Pusey.

V. obtusifolia, Jord. 1 Wytham. 5 Ambarrow.

*V. *subtilis*, Jord. 3 Basildon, 1894.

V. contempta, Jord. 4 Hurst Mill, 1910.

*V. *Deseglisei*, Jord. 2 Wootton, 1903. 4 Newbury Wash, *Jackson*, 1906.

*V. *Lloydi*, Jord. 5 Ambarrow, *Monckton*. See B.E.C. 98, 1917.

*V. *variata*, Jord. 2 Boar's Hill, 1895.

*Var. *sulphurea*, Drabble. Boar's Hill, 1895.

308. *Polygala serpyllacea*, Weihe, *var. *vincoides*, Chadot. 5 near Bracknell, 1918, *Druce* and *Lady Davy*, but not an extreme form..

309. *P. vulgaris* L. 1 Shrivenham. 2 Radley. 4 Brimpton. 5 Well. Coll., *Monckton*. Thatcher's Ford.

*310. *P. oxyptera*, Reichb. Near West Ilsley, 1904. Named for me by E. F. Linton, but it is probably distinct from Reichenbach's plant.

*318. *Dianthus deltoides* L. Brimpton, 1894-5. Mrs. Chorley, the first certain record, although Ray (*Corr.* 60) says in 1670 that it grows 'in many places of Berkshire.' The editor there identifies it as *deltoides*. 5 Field nr. Wellington Coll. Station, 1907, *Fitzgerald*.

319. *D. Armeria* L. prope Windsor, *Sibth. MSS.* 1780. 1 nr. Carswell, *Miss Niven* (as *deltoides*). 2 nr. Kennington, *F. W. Stone*, a sol. sp. 3 Dry pastures, Clay Hill, Bucklebury Common, *Wallis*.

*320. *D. barbatus* L. Alien. Besselsleigh, in a lane far from houses, *Miss Walker*.

†331. *Saponaria Vaccaria* L. Alien. 2 by the river nr. Sandford, *Stone*. 3 Tilehurst, *Murray*. Reading, *Wallis*.

336. *Silene Cucubalus*, Wibel, *var. *brachiata* (Jord.). 1 Cumnor.

†338. *S. conica* L. Colonist, Sand-pit opposite Dog House Inn, Frilford, *Comm. Walker*, 1905. Frilford Common, 1914, *Miss Lindsay*, abundant.

†343. *S. anglica* L. 2 Cothill. 3 Tilehurst, *Murray*.

*342. *S. gallica* L. Alien. Cothill, 1908.

359. *Lynchnis alba*, Mill. Roman Silchester.

360. *L. dioica* × *alba*. 1 Appleton. 4 Below Riever Wood, *Hurst*.

358. *L. Flos-Cuculi* L. Roman Silchester. *Sub-var. *viridescens* Druce, Abingdon. 4 Burghfield. 5 Earley.

363. *L. Githago*, Scop. Roman Silchester.

*364. *L. Coronaria* L. Alien. Railway, Earley, 1914.

366. *Cerastium erectum*, Coss. and Germ. (*quaternellum*). Newtown Common, *Bicheno*. Green Park, Windsor, *Cox* in *Hb. Brit. Mus.* 1847. Finchampstead Ridges.

367. *C. arvense* L. 2 Blewbury. 3 Compton Downs. 5 Brightwaltham, *Holliday*.

*367 (2). *C. tomentosum* L. 5 Railway, Maidenhead, *Riddelsdell*. Alien.

*372. *C. pumilum*, Curtis. Glareal. First found by the author in 1883. Blewbury Downs, in small quantity. Not yet recorded for Bucks or Middlesex.

*374. *C. tetrandrum*, Curtis. Glareal. First found by the author in 1896. 5 near Bracknell. Not recorded for Bucks, Middlesex, or Oxon.

377. *Stellaria aquatica*, Scop. 4 Pinge Wood, *Murray*. *Var. *scandens*, Lej.—Seven feet high in Sulham woods.

380. *S. umbrosa*, Opiz & Rupp. 4 Cookham, *Jackson*. 5 Sandhurst, *Marshall* in *Journ. Bot.* 84, 1899. Jouldern's Ford, Loddon Bridge.

*382. *S. Dilleniana*, Moench. First record, the author, 1915, near Abingdon. Var. *palustris* (Ehrh.), Druce. Pinge Wood, *Murray*. Three Mile Cross, *Murray*. 5 Sandford Mill.

383. *S. graminea* L. Roman Silchester. Large flowered form near Risely.

391. *Arenaria serpyllifolia* L. Var. *scabra*, Fenzl. 1 Cumnor, &c.

401. *Sagina subulata*, Presl. 2 Boar's Hill.

399. *S. nodosa*, Fenzl. St. Neot's Meadow, Radley.

409. *Spergula arvensis* L. Roman Silchester.

*419. *Claytonia perfoliata*, Donn. Alien. Allotments, Reading, *Dr. Ashby*, Wellington College, 1918. Wokingham. *G. Parry*.

421. *Montia fontana* L. Roman Silchester.

423. *Elatine Hydropiper* L. Mortimer, *Rev. E. C. Crutwell*, 1917, in *B.E.C.* 100, 1917.

425. *Hypericum Androsaemum* L. 4 Copse between Beenham and Woolhampton, *Summers*. Near Bradfield, *Wallis*.

430. *H. perforatum* L. Roman Silchester.

435. *H. quadrangulum* L. 1 Hedge near Wytham Meadows, 1905. 4 Aldermaston Soke, *Summers*. 5 By the Blackwater, *Marshall*. Var. *punctatum*, Schinz. Well. Coll., *Monckton*, 1918.

439. *H. elodes*, Grufb. 3 Bucklebury Common, *Wallis*.

*441. *Althaea rosea* L. Alien. Abingdon. Reading.

*442. *A. hirsuta* L. Alien. 2 Cothill, 1906.

*450. *Malva Alcea* L. 3 Reading. Alien on waste ground near railway.

451. *M. moschata* L. Var. *integrifolia*, Lej. (*Ramondiana*). 3 Ilsley Downs.

452. *M. sylvestris* L. and 453 *M. rotundifolia* L. Roman Silchester.

†454. *M. pusilla*, With. 1 Wytham, in some quantity.

*462. *Malope malacoides* L. Near Clewer, *J. G. Everett*, 1902. Alien.

466. *Radiola Linoides*, Roth. (*Millegrana Radiola*). 4 Padworth, *Summers*. 5 Bagshot, *Sibthorp*.

†468. *Linum usitatissimum* L. Roman Silchester.

†479. *Geranium phaeum* L. 4 Boxford, quite naturalised.

†476. *G. nodosum* L. Besselsleigh, *Miss Walker*. Alien.

478. *G. pratense* L. *forma alba*. Between Cumnor and Abingdon, *Murray*. 2 Cothill.

486. *G. pusillum*, Burm. f. 3 Upton, Blewbury. 4 North Croft. 5 Blackwater, Loddon Bridge, Cookham.

487. *G. lucidum* L. 4 Avington, *Summers*. Welford.

494. *Erodium moschatum*, Ait. 2 Abingdon. Alien.

†500. *Tropaeolum peregrinum* L. Alien. Abingdon.

†505. *Oxalis corniculata* L. Southern Hill, Reading. Three Mile Cross, *Wallis*.

†506. *O. stricta* L. Alien. Southern Hill, Reading, *Wallis*.

†510 *Impatiens Noli-metangere* L. 5 Binfield, *Bp. of Reading*, ? if *biflora*.

†512. *Impatiens parviflora*, DC. Alien. Reading, *S. M. Payne* in *Herb. Bab.*

†513. *I. glandulifera*, Royle. Alien. Reading, *Higgens*, 1917.

515. *Ilex Aquifolium* L. First record MS. note on Sowerby's drawing in *H.B.M.*, Sept. 1, 1798: 'Some trees in full blossom Windsor Castle and one imperfect berry, June 1, 1798.' *Var. *senescens*, Gaud. Aldermaston, &c.

517. *Euonymus europaeus* L. First record circa Oxford, *Sibth. MS.* 1780. 1 Newbridge. 2 East Garston, *Grove*, 1833. 5 Sandhurst, *Miss Todd.*

526. *Acer campestre* L. forma *dissectifolium*, Melv. 2 Wootton.

535. *Genista tinctoria* L. 1 Shrivenham. 4 Burnt Common, Padworth, *Wallis.*

*531. *Laburnum anagyroides*, Med. Alien. Seedlings in gravel pits, Abingdon.

539. *Ulex minor*, Roth. *Var. *longispinosus*, Druce. (R. & F.). Wokingham, &c.

540. *Cytisus scoparius*, Link. *Var. *Andraeanus*, Puiss. Inkpen Common, *Rev. H. D. Butler.*

567. *Trigonella ornithopodioides* DC. (*purpurascens*). 4 Shinfield, *Prof. Percival.*

†579. *Medicago denticulata*, Willd. Alien. 2 Abingdon, with a form approaching *apiculata.*

†580. *M. arabica*, Huds. Alien. 2 Abingdon, *Miss Lindsay.*

*581. *M. minima*, Desr. Alien. Abingdon, *Miss Lindsay.* *Var. *recta* with above.

593. *Melilotus officinalis*, Lam. 5 Wellington Coll. *Var. *unguiculata*, Ser. 2 Abingdon.

†595. *M. alba*, Desr. 2 Besselsleigh. 3 & 4 Reading. 5 Well. Coll.

†586. *M. arvensis*, Wallr. 2 Cothill.

†597. *M. indica*, All. 2 Grandpont, *Ellman.* 4 Beenham, *Wallis.* 3 & 4 Reading. 5 Wellington College.

598. *Trifolium medium*, Huds. 1 Shrivenham. 4 Near Mortimer. 5 Finchampstead.

599. *Trifolium pratense* L. White flowers, Hampstead Norris, *Pamplin*, 1833. Var. *parviflorum*, Bab. 5 Waltham St. Lawrence, *I. H. Burkill* in *Journ. Bot.* 235, 1901. 2 Sandford, *Prof. Bullock.* *Var. *americanum*, Harz. 1 Wytham.

611. *T. arvense* L. Besselsleigh, *Miss Walker.* *Var. *rubellum* (Jord.) Didcot.

618. *T. scabrum* L. 2 Besselsleigh, 1907. 4 Padworth Common. 5 Sandford Mill, *Summers.* I have not seen the latter two.

619. *T. striatum* L. 4 Ufton Court, *Summers.* Padworth, *Wallis.* 5 Sandford Mill, *Summers.* Sonning Cutting, *Murray.*

620. *T. subterraneum* L. 2 Frilford, *F. J. Stone.* Kingston Bagpuize, *Lester Garland.* Oakley House, *Comm. Walker.* 5 Shinfield, *Percival.* Sandford Mill. Between Cressingham and Arborfield, *Wallis.*

621. *T. fragiferum* L. 3 Tilehurst. 4 Weir Mills, *Summers.*

*623. *T. tomentosum* L. Alien. Abingdon racecourse, *Gambier Parry*, 1917.

*644. *Lotus siliquosus* L. Alien. Well established, Streatley, *Murray*, 1913.

648. *Lotus tenuis*, Kit. 1 Shrivenham. 2 Boar's Hill. 3 Clay Hill, *Jackson.* Near Pepper Lane, Reading, *Wallis.*

*651. *Galega officinalis* L. 5 Finchampstead, *Monckton.* Alien.

655. *Astragalus danicus*, Retz. 2 Chilton Downs, *R. Cardew.* West Ilsley, *Miss E. Morland*, 1901.

*666. *Coronilla varia* L. Alien. Near Radley, *H. L. Porter*, 1915.

671. *Hippocrepis comosa* L. Cherbury Camp.

*678. *Vicia tenuifolia*, Roth. Var. *laxiflora*, Gris. Alien. 1 Bushy ground, nr. Stevenage. (Wilcote, Oxon, *Lady Margaret Watney*).

*681. *V. villosa*, Roth. Alien. 2 Boar's Hill, *Vincent.* By the railway, near Oxford.

*683. *V. dasycarpa*, Ten. 2 Cothill. = *V. varia.* Alien.

*687. *V. bithynica* L. Alien. Cothill.

*691. *V. lutea* L. Alien. Cothill.

697. *V. sativa* L. Var. *cordifolia*, Beck. 2 Wootton.

698. *V. angustifolia*, Reich. *Var. *acuta*, Pers. Cothill.

700. *V. Lathyroides* L. 2 Frilford. Cothill.

704. *V. hirsuta*, Gray. *Var. *angustifolia*, Druce. Boar's Hill.

705. *V. tetrasperma*, Moench. (*gemella*). 3 Tilehurst, *Murray.* 4 Reading, Three Mile Cross, *Murray.* Var. *tenuissima*, Druce. 5 Strathfieldsaye. To this belongs Mr. Boswell's *V. gracilis* in *Britt. Contr.*

†706. *V. gracilis*, Lois. Boar's Hill, *F. J. Stone*, 1899, in great quantity but gradually died out. See *B.E.C.* 570, bis 1898.

710. *Lathyrus sylvestris* L. First record, *L. latifolius major*, from Merley Wood, *Dillenius MS.*, 1746.

713. *L. palustris* L. Miller's plant (*Gard. Dict.* ed. 7). From Windsor Forest. Mr. Britten (*Journ. Bot.* 9, 1901) suggests is *L. montanus.*

725. *L. Nissolia* L. 5 Crazies Hill, *Ashby*, 1900.

726. *L. Aphaca* L. 2 Kennington, *G. Parry.* Cothill, Abingdon.

*717. *L. inconspicuus* L. 2 Cothill. Alien.

741. *Prunus spinosa* L. Stones in Roman Silchester with those of *P. insititia*, *domestica* and *avium.* A tree of the latter species in Ashampstead Common measured 75 ft. high and 8 ft. girth.

738. *P. Cerasus* L. First record, Pangbourne, *W. W. Newbould* in *Hb. Br. Mus.* 5 Crowthorn, *Monckton.*

746. *Spiraea Ulmaria* L. Roman Silchester. Var. *denudata*, Boenn. 2 Ferry Hinksey. 5 Coleman's Moor.

*744. *S. salicifolia* L. Alien. Near the Mill at Hampstead Marshall, *Miss King.*

748. *Rubus idaeus* L. Roman Silchester, and also the Blackberry. var. *anomalus*, Arrh. (Leesi). 2 Cothill, 1916.

749. *R. fissus*, Lindl. Wellington College, *Marshall*, l.c.

753. *Rubus plicatus*, W. & N. 2 Cothill. 5 Wellington College, *Marshall*, l.c.

754. *R. nitidus*, W. & N. 4 Greenham, *Jackson* in *Journ. Bot.* 72, 1907.

763. *R. carpinifolius*, W. & N. 4 Bucklebury, *Jackson*, l.c.

780. *R. rhombifolius*, Weihe. 4 Greenham, *Jackson*, l.c.

766. *R. argenteus*, W. & N. (*erythrinus*). 5 Wellington College and Sandhurst, *Marshall*, l.c. 4 Hampstead Park, *Jackson*, l.c.

*779. *R. calvatus*, Blox. First record, Bagley Wood, 1861, *Holliday* in *Hb. Druce.* Boggy fir wood near Sandhurst, *Marshall*, l.c.

*789 (3). *R. egregius* forma *effeminatus*, Focke. Boar's Hill, *Focke.* New to Science.

*798. *R. hirtifolius*, M. & W. Var. *mollissimus*, Rogers. Greenham Common, 4 *Jackson*, first record, l.c.

Var. *danicus* (Focke). Near Sandhurst, *Marshall*, l.c.

802. *R. leucostachys*, Schleich. Var. *gymnostachys* (Genev.). Berkshire, *Rogers, Brit. Rubi.*

*803. *R. leucanthemus*, P.J.M. Berkshire, *Rogers,* l.c.

805. *R. criniger*, Lint. First record, Maidenhead, the author.

*809. *R. cinerosus*, Rogers. First record, Streatley, the author, 1905.

*815. *R. raduloides*, Rogers. First record, Boar's Hill, 1908. *Druce* and *Ley.*

818. *R. infestus*, Weihe. Boar's Hill, 1911.

820. *R. Borreri.* *Var. *dentatifolius*, Briggs. 4 Greenham Common.

827. *R. echinatoides*, Rogers. 2 Boar's Hill. 3 Tilehurst. 4 Greenham Common, *Jackson*, l.c.

828. *R. echinatus*, Lindley. First record, Bagley Wood, *W. Holliday* 1861, in *Herb. Druce.* 4 Donnington Castle, *Jackson.*

830. *R. cenomadensis*, Sudre. The (*oigocladus*) of the *Flora.*

835. *R. Babingtonii.* *Var. *phyllothyrsus*, Rogers, non Frid. Berks, see *Bot. Exch. Club*, 1897. 4 Mortimer.

837. *R. ericetorum*, Lefev. 4 Hampstead Park, *Jackson*, l.c.

842. *R. fuscus*, W. & N. *Var. *nutans*, Rogers. 2 Boar's Hill. *Var. *macrostachys* (P.J.M.). 5 Twyford.

844. *R. pallidus*, W. & N. 4 Snelsmore, Greenham, *Jackson*, l.c.

849. *R. foliosus*, W. & N. 4 Crookham, *Jackson*, l.c.

850. *R. rosaceus.* Var. *infecundus*, Rogers. 4 Hampstead Marshall, *Jackson*, l.c.

*855. *R. hostilis*, P.J.M. & Wirtg. First record. 5 Binfield, *F. A. Rogers.*

858. *R. dasyphyllus*, Rogers. (See *R. Koehleri*, var. *pallidus.*). Common in Berks.

860. *R. Marshalli*, Focke. *Var. *semiglaber*, Rogers. Greenham Common, the type at Crookham, *Jackson*, l.c.

882. *Geum rivale* L. Near Inkpen in an upland situation, *Summers.*

883. *Geum intermedium*, Ehrh. With both parents at Boxford (4).

†885. *Fragaria moschata*, Duchesne (*muricata*). 5 Near Finchampstead, *Higgens.*

886. *F. vesca* L. Roman Silchester. Var. *bercheriensis*, Druce. This was cultivated for some years by the late Count von Solms Laubach. He wrote in 1903 that he thought it might be a hybrid of *moschata* and *vesca* and very near *moschata*. Subsequently he considered it to be a sub-montant variety of *vesca*, which had once been in cultivation and had escaped therefrom. This may well be the case, since prior to the introduction of the American plants various races of *vesca* and the Haut Bois were cultivated in Britain. This plant grew near an old English residence, from which it may have escaped. The fruits were noticeable for their flavour and odour, and there were white as well as red 'berries.'

*892. *Potentilla recta* L. 4 Reading, *Wallis.* 5 Mortimer Common, *Weaver.* Alien.

*894. *P. canescens*, Bess. 5 Twyford. Alien.

895. *P. argentea* L. Frilford Heath, abundant, 1912. 4 Padworth, *Summers.*

*896. *P. intermedia* L. 2 Cothill, 1908. 5 Wellington College, *Monckton.* B.E.C. 1917.

903. *P. erecta*, Hampe (*silvestris*). Roman Silchester.

902. *P. procumbens* × *erecta*. 2 Tubney. *P. procumbens* × *reptans*. 5 Blackwater.

†906. *P. norvegica* L. 2 Didcot.

909. *Alchemilla vulgaris* L. Var. *minor* Huds. (*filicaulis*). 4 Reading, *Wallis.* Bagley, *Holliday*, 1857.

912. *A. arvensis*, Scop. Roman Silchester.

914. *Agrimonia odorata*, Mill. 5 Arborfield, *Higgens.*

†918. *Poterium polygamum*, W. & K. 1 Carswell, *Niven.* 4 Clay Hill, Bucklebury, *Wallis.*

920. *P. officinale*, Gray. 3 Pinge Wood, *Murray.* 4 Fobney Meadows. Stratfield Mortimer, *Summers.*

925. *Rosa stylosa*, var. *systyla* (Bast.). 1 Wytham. 2 Betn. Radley and Kennington. 4 Brimpton. 5 Strathfieldsaye.

926. *R. canina* L. *Var. *aciphylla*, Rau. 4 Brimpton. Roman Silchester. *R. transitoria*. *Var. *globularis* (Franchet). 2 Marcham. *Var. *viridicata*, Rip. 4 Brimpton. *Var. *curticola*, Pug. 5 Blackwater.

932. *R. dumetorum*, Thuill. *Var. *semiglabra* (Rip). 2 Radley. 4 Brimpton.

936. *R. micrantha*, Sm. *Var. *permixta* (Déség.). 4 Brimpton.

937. *R. Eglanteria* L. (*rubiginosa*). *Var. *rotundifolia* (Rau). 4 Brimpton. *Var. *apricorum* (Rip.). 4 Brimpton.

941. *R. mollissima*, Willd. Var. *foetida* (Bast). 5 Waltham.

*Var. *cuspidatoides* (Crép.). 1 Cumnor. 2 Tubney, Cothill. 3 Moulsford.

*Var. *uncinata* (F. A. Lees). 1 Cumnor. 2 Boar's Hill.

*Var. *pseudo-mollis* (Baker). 1 Cumnor. 2 Boar's Hill, Tubney, Marcham.

*Var. *pseudo-cuspidatoides* (Crép.). 3 Moulsford.

*942. *R. omissa*, Déség. 2 Tubney.

943. *R. villosa* L. *Var. *submollis* (Ley). 2 Boar's Hill.

953. *Pyrus Malus* L. Roman Silchester.

†954. *Pyrus communis* L. 2 Radley Wood. 5 Arborfield, *Wallis.*

961. *P. Aria*, Ehrh. A large tree near Radley. 3 Pangbourne, *Hb. Bab.*

963. *P. torminalis*, Ehrh. 4 Mortimer, *Summers.*

966. *Crataegus monogyna*, Jacq. (*Oxyacantha*). Roman Silchester. *Var. *quercifolia*, Loud. 4 Ufton. × *oxyacanthoides.* 1 Wytham. 2 Radley.

967. *C. oxyacanthoides*, Thuill. *Var. *eriocalyx*, Druce. Wytham.

*973. *Amelanchier canadensis*, Med. 5 Naturalised in wood between Ascot and Bracknell.

985. *Saxifraga tridactylites* L. On mud of a recently dried up mill-dam, Cothill, 1918.

992. *S. granulata* L. 1 Carswell, *Niven.* 2 Besselsleigh, *Miss Walker.* Cherbury Camp. 3 Lowbury, Blewbury Downs. Radley, Sutton Courtney. 4 Newbury, *Bicheno.* Thatcham, *Summers.*

*996. *Chrysosplenium alternifolium* L. First found by *Mr. C. P. Hurst*, 1910. 4 Wood near Gibbet Hill. Greenham Common, 1912, *Miss Todd.*

997. *C. oppositifolium* L. 3 Sulham, *Murray.* Nr. Bradfield, *Vince.* 4 Sulhampstead, Padworth, *Summers.*

†1002. *Ribes nigrum* L. 3 Bucklebury, *Wallis.* Streatley, *Murray.*

1007. *Cotyledon Umbilicus -Veneris* L. 4 Donnington, *Comyns.*

1010. *Sedum Telephium* L. Burnt Hill, Yattendon, *Irvine.* Tilehurst, *Murray.*

*1020. *S. Cepaea* L. Bradfield, 1900, *J. H. Vince.* Alien.

1018. *S. dasyphyllum* L. 2 Kingston, Northcourt.

1015. *S. acre* L. *Var. *Drucei*, Schroeter (*S. Drucei*, Graebner). This is the Berkshire form of *acre.* It was especially abundant in flower in 1913. Graebner asserts it to be a distinct species.

†1012. *S. reflexum* L. 1 Buckland. 2 Kingston, Drayton. 4 Near Ufton and Sulhampstead, *Murray.* Near Reading, *Higgens.*

1028. *Drosera longifolia* L. 4 Padworth Common, *Summers.*

1029. *D. rotundifolia* L. 4 Boxford, 5 circa Bagshot, *Sibth. MS.*

1030. *Hippuris vulgaris* L. 2 Letcombe Bassett.

1033. *Myriophyllum alterniflorum* DC. 5 Wokingham, *Gambier Parry.*

1034. *M. verticillatum* L. 5 Sonning, *Herb. Bab.* 1830.

1039. *Callitriche intermedia.* *Var. *rivularis,* Williams. 2 Marcham.

1046. *Epilobium angustifolium* L. First record, circa Henley, *Sibth. MS.*, 1780. 2 Steventon, Kennington railway. 4 Englefield Green. 5 Now become an abundant and aggressive weed about Wellington College.

1047. *E. hirsutum* L. Var. *villosissimum,* Koch. 4 Billingbear Park. *Mouckton.*

1054. *E. montanum* L. Var. *verticillatum,* Koch. 3 Tilehurst.

1052. *E. roseum,* Schreb. 3 Cold Ash, *Wallis.*

1049. *E. tetragonum,* L. Var. *stenophyllum.* 4 Bucklebury, *Jackson.*

1051. *E. obscurum* × *roseum.* By the Blackwater, *Marshall,* l.c.

†1061. *Oenothera biennis* L. 2 Radley.

*1064. *Oe. Lamarckiana,* Ser. Many thousands occurred along the railway from Didcot to Steventon in 1908, but they have mostly disappeared. 3 In a wood at Tidmarsh.

1076. *Bryonia dioica,* Jacq., 1078 *Hydrocotyle vulgaris* L., and 1086

1086. *Conium maculatum* L. Roman Silchester.

†*1082. *Astrantia major* L. Said to be in plenty at Enborne in Berks, *Loud. Mag. N. H.*, vi. 379, 1833.

†1087. *Smyrnium Olusatrum* L. 4 Near Ufton Church.

1090. *Bupleurum rotundifolium* L. First record, circa Oxford, *Sibth. MS.* 1780. Oatmill, nr. Abingdon, *Bicheno.* 3 Railway near Reading.

*1091. *B. lancifolium,* Hornem. (*protractum*). 2 Cothill, 1908. Abingdon, 1918, *Gambier Parry*! Alien.

1097. *Apium graveolens* L. Roman Silchester. First record, Shippon, *Bicheno,* 1815.

1099. *A. inundatum,* Reichb. f. First record, Bagshot, *Sibth. MS.*, 1780.

*1101. *Ammi majus* L. 2 Letcombe Castle, *Riddelsdell in B.E.C.*, 1909. Alien.

1106. *Carum segetum,* B. & H. First record, Bagshot, *Sibth MS.*, 1780. 2 Uffington, *Mrs. Bentall.* 3 Streatley, *Towndrow.*

1111. *Sium erectum,* Huds. First record, circa Oxford, *Sibth. MS.*, 1780. 4 Fobney Meadows. Padworth, *Summers.*

1115. *Conopodium majus,* Loret (*denudatum*). Roman Silchester.

1126. *Cerefolium sylvestre,* Bess. *Var. *latisecta* (Druce). This is the common Berkshire plant.

1127. *C. Anthriscus,* Bess. 2 Radley. 5 London Road, Reading, *Summers.* Coleman's Moor. 2 Abingdon, *G. Parry.*

†1128. *C. sativum,* Bess. 5 Near Bray, *Riddelsdell.* Island in Thames near Cookham.

1132. *Oenanthe aquatica,* Poir. (*Phellandrium*). Beech Hill, Mortimer, *Summers.*

1137. *Oe. Lachenalii*, Gmel. *Var. *approximata*, Koch. 2 Marcham, *B.E.C.* 31, 1917.

1138. *Oe. fistulosa* L. *Var. *Tabernaemontani* (Gmel.). 1 Wytham. 2 St. Neot's, Kennington.

1139. *Aethusa Cynapium* L., *Peucedanum sativum*, B. & H., and *Heracleum Sphondylium* L., all in Roman Silchester

*1153. *Heracleum villosum*, Fisch. 2 Abingdon. Alien.

*1157. *Coriandrum sativum* L. Roman Silchester. 2 Cothill, 1907. Reading, *Wallis*. Bradfield, 1916, *Vince*. Alien.

1168. *Caucalis arvensis*, Huds. 2 Cholsey, *Henslow*, 1835. 4 Newbury, *Bicheno*, 1812. First record, circa Oxford, *Sibth. M.S.*, 1790.

1169. *C. nodosa*, Scop. 4 Betn. Thatcham and Newbury, *Summers*. *Var. *pedunculata* (R. & F.), Druce. 2 Shippon.

1171. *C. latifolia* L. 2 Cothill. 4 Enborne Road, *Jackson*.

1176. *Adoxa Moschatellina* L. 4 Mortimer, *Summers*.

1178. *Sambucus nigra* L. Roman Silchester.

1179. *S. Ebulus* L. 2 Kennington. Near Weyland's Smithy. 4 Kintbury, *Miss Todd*. Aldermaston, *Summers*.

†1184. *Lonicera Caprifolium* L. Betn. Pusey and Cherbury Camp.

1194. *Galium erectum*, Huds. 1 Nr. Carswell, *Miss Niven*. 3 Moulsford, *Miss Neild*. 4 Newbury, *Bicheno*, Boxford. 5 Wellington Coll., *Monckton*, 1918. *forma ramosior*, 5 Cookham.

1196. *G. pumilum*, Murray (*sylvestre*). 1 Wytham. 2 Frilford Golf Course, *Lady Davy*. A recent immigrant.

1198. *G. palustre* L. *Var. *gracile*, Knaf. 1 Godstow and Wolvercote. *Var. *serrulatum*, Druce. 5 Hurst.

*1203. *G. Valantia*, Web. (*Vaillantii*). 2 Cothill, 1908. 4 Reading, *Jackson*. Alien.

†1210. *Asperula arvensis* L. 2 Cothill.

1215. *Valeriana officinalis* L. Roman Silchester. 3 Pangbourne, *Hb. Bab.* 1837.

†1219. *Kentranthus ruber*, Druce. 2 Drayton, *Miss Lindsay*.

1224. *Valerianella dentata*, Poll. Roman Silchester.

1231. *Dipsacus pilosus* L. 1 Wytham. 4 Welford, *Osmond*. Aldermaston, *Bicheno*. Burghfield, *Murray*. 5 Holme Park, Sonning, *Summers*.

1237. *Scabiosa Succisa* L. First record, circa Oxford, *Sibth. M.S.*, 1780. Newbury, *Bicheno*, 1817.

1248. *Bellis perennis* L. A fasciated example with six heads on one stem. Yattendon, *Simeon*, 1906.

†1251. *Aster paniculatus*, Lam. 2 Cothill. Alien.

1261. *Erigeron acre* L. 3 Bucklebury, *Wallis*. 4 Padworth, *Summers*.

†1262. *E. canadense* L. 5 Crowthorne, *Monckton*.

1266. *Filago apiculata*, G. E. Sm. 2 Besselsleigh, *Walker*. Cothill, Frilford.

1269. *F. minima*, Fr. A slender, simple erect form. Between Wokingham and Well. Coll., *Miss E. Armitage in Journ. Bot.* 54, 1904.

1279. *Inula Helenium* L. 1 Wytham, abundant 1899. I was unable to see it in 1918. 2 By the railway near Shrivenham. 4 near Aldermaston in a copse, *H. A. King*.

1286. *Pulicaria squarrosa*, Bernh. (*vulgaris*). 4 By the roadside from main Mortimer road to the Three Firs, *Wallis*. Grazebrook, *Tufnail*. Shinfield, 1830, *Herb. Salt*.

†1290. *Ambrosia artemisifolia* L. 1 Wytham Mill. 4 Reading, *Stansfield*. 5 Bearwood. Shinfield.

†*1294. *Xanthium strumarium* L. 2 Abingdon. 5 Maidenhead, *Summers*.

†1295. *X. spinosum* L. 1 Wytham. 2 Abingdon, *N. Lindsay*. 5 Waltham, *Gard. World*, 1898.

*1301. *Helianthus annuus* L. 2 Abingdon. Alien.

*1301 (2). *H. debilis*, Nutt. 2 Abingdon. Alien.

*1302. *H. rigidus*, Desf. 2 Abingdon. Near Botley. Frilford.

†1303. *H. tuberosus* L. 2 Abingdon, Cothill. 3 Reading.

1310. *Bidens tripartita* L. Roman Silchester.

1329. *Achillea Millefolium* L. *f. *conspicua*, Druce. Hinksey, &c.

*1332. *A. decolorans*, Willd. (*serrata*). Thames at Streatley, *J. Woods*, 1813. Alien.

1343. *Anthemis arvensis* L. 1 Carswell, *Niven*.

1339. *A. nobilis* L. 3 Englefield Green, *Cox*. In lawns at Southern Hill, Reading, *Wallis*. 5 Well. Coll. *Monckton*.

†1338. *A. tinctoria* L. 2 Boar's Hill.

1347. *Anthemis Cotula* L. forma *latisecta* Thell. 2 Abingdon.

1353. *Chrysanthemum Leucanthemum* L. Roman Silchester.
*forma *flosculosum*, Druce. 4 Wickham, *Miss Todd*, 1918. See *Rep. B.E.C.*

*1356 (6). *C. serotinum* L. 2 Frilford. Abingdon. Alien.

*1362. *Matricaria suaveolens*, Buch. (*discoidea*). First found by the writer in 1900, see *Journ. Bot.* xx, 1905, betn. Twyford and Hurst. 4 Kintbury, *Hurst*. Near Grazeley. 5 Wokingham. Well. Coll., *Monckton*, 1915. Ambarrow. Twyford, *Hurst*, 1910. Sandford Mill.

1366. *Tanacetum vulgare* L. 1 Shrivenham. 2 Sunningwell, *Holliday*, 1858. 5 Shinfield, *Summers*. Old Windsor, *Mosley, Hb. Br. Mus.* Sunningdale, Jouldern's Ford.

†1388. *Doronicum Pardalianches* L. 3 Pangbourne, *Higgens*. 4 Aldermaston Park, *Galt*. Nr. Alden Bridge [? Hants.]

1396. *Senecio squalidus* L. Since the *Flora* was published in 1897 this species has increased most wonderfully at Reading, where it is now even commoner than at Oxford, and has spread from the railway ballast to walls and waste places. It is yearly extending its range along the G. W. railway, having reached Hanwell in Middlesex. Along the main line it is now plentiful at Swindon and has penetrated to Portland in Dorset, to Newport, Monmouth, and Cardiff in Glamorgan, but it is not certain that these plants owe their origin to Oxford, since it may have come with ballast to Cardiff. *Squalidus* is also established on the railway near Worcester and Droitwich and has settled itself in Cardiganshire. North of Oxford it has reached Banbury, Warwick and Salop, and extends into Northamptonshire at Kings Sutton. Along the Thame railway it has spread to Albury, and on the London and North-Western Railway it has been carried to Verney Junction and Bletchley. By 1906 it had spread to the South-Eastern line at Reading, and Wellington College. To all these places, with the possible exception of Cardiff, it has been carried by passing trains within the last thirty years. That it is so conveyed one is able to speak positively, for fruits were noticed to enter a railway carriage near Oxford and to float round and round until eventually they were carried out by air currents after passing Reading. In a similar way fruits of *Salix cinerea* were observed to be carried over thirty miles from their place of origin. A solitary plant of *squalidus* was found on mud of a drying-up pool at Cothill in 1918, the fruit of which had probably been blown from Swindon.

*Var. *leiocarpus*, Druce. Reading, Kintbury, *Summers.*

*Forma *subintegrus*, Druce. Didcot, Reading.

*1399. *S. viscosus* L. 3 Reading, on railway. First record, *Druce* in *B.E.C.* 239, 1906.

1403. *S. integrifolius*, Clairv. (*campestris*). 4 Chilton Foliot, *Summers.*

1408 (2). *Senecio lautus*, Forst. This Australian alien was discovered on waste ground near Abingdon by Miss Lindsay, introduced with sheep-skins, 1917.

†1410. *Calendula officinalis* L. Abingdon, Reading, on railway.

1415. *Carlina vulgaris* L. 1 Wytham.

1418. *Arctium Lappa* L. With *Acrospermum compressum*, Tode. Bagley Wood, *Baxter*, 1822. Radley.

1420. *A. nemorosum*, Lej. 1 New Bridge. 3 Reading.

1422. *Carduus nutans* L. Roman Silchester. 1 New Bridge. 3 Pangbourne, *Herb. Bab.* With glabrous rosettes of leaves at Wytham.

C. nutans × *acanthoides.* 1 New Bridge. 2 Cherbury, very fine. 3 Reading.

1425. *C. tenuiflorus*, Curtis. 2 In a lane between Radley and Kennington, 1901, in great quantity. Since disappeared.

1426. *Cirsium* (*Cnicus*) *eriophorum*, Scop. 1 Near Pusey. Abundant near New Bridge. 2 Near Cholsey towards Compton, *Comm. Walker.*

1427. *C. lanceolatum*, Scop. Roman Silchester.

1430. *C. pratense*, Druce (*britannicum*). 2 Abingdon meadow.
×*palustre*=**C. Forsteri* (Sm.) Druce. 2 Cothill, *Miss Todd*, 1918.

1433. *C. arvense*, Scop. First record, circa Oxford, *Sibth. MS.* 1780.
†Var. *setosum*, Mey. 1 Wytham, in some quantity and persistent.

1439. *Onopordon Acanthium* L. 2 Kingston Bagpuize. 3 Tilehurst, *Murray*.

†1443. *Mariana lactea*, Hill (*M. Mariana*). 2 Besselsleigh, *Miss Walker*. Still persists at Abingdon. 3 Reading, *Murray*.

1446. *Serratula tinctoria* L. 2 Birch Copse, *Holliday*, 1858. 5 Between Windsor and Ascot, *Countess Fortescue*, 1915.

1451. *Centaurea nigra* L. Var. *decipiens*, Cholsey, *Henslow*, 1825. forma *radiata*, with whitish ray, Wytham.

†1462. *C. Solstitialis* L. 2 Cherbury. Boar's Hill.

†1463. *C. melitensis* L. 2 Abingdon.

*1465. *Centaurea Calcitrapa* L. First found by the writer on waste ground near the railway, Reading, 1911.

*1477. *Carthamus tinctorius* L. 2 Abingdon, 1913, *Miss Lindsay* and *Druce*. 3 Reading. Alien.

1488. *Picris Echioides* L. 4 Theale, *Murray*. Reading ballast. 5 Maidenhead, *Summers*.

1494. *Crepis biennis* L. 1 Shrivenham. 2 Frilford. Lowbury, with very large almost simple leaves.

†1495. *C. nicaeensis*, Balb. 3 Reading ballast.

1502. *C. taraxacifolia*, Thuill., has now spread all over the county.

†1503. *C. setosa*, Hall. f. Abingdon, *F. Stone*.

*1510. *Hieracium praealtum*, Vill. First found, in 1918, in some quantity on the railway-bank near Hungerford, *C. P. Hurst*, well established. Alien.

*1512. *H. aurantiacum* L. Gravelly field near Bradfield, 1908, *J. H. Vince*. Alien.

*1508. *H. pellucidum*, Laest. First found by the writer, 1904, in the railway cutting through the chalk near Upton, to which the fruit must have been brought by wind currents, probably from Gloucester, Somerset, or Oxford, as previously to the making of the railway it did not grow in the vicinity.

*1572. *H. serratifrons*, Almq. 5 Crowthorn, site of Coxe's wood, 1916, *Monckton*, *B.E.C.* 1917, and *var. *lepistoides*, Johann, nearest to this but leaves untypical. 4 Reading, 1913, *Druce*. 5 Coxe's Wood, Crowthorne, *Monckton*, 1916.

**H. transiens*, Ley. 3 Basildon. 4 Brimpton. 5 Nr. Wargrave.

**H. torticeps*, Dahlst. 2 Near Didcot.

*1588. *H. surrejanum*, F. J. H. 5 Finchampstead, Ridges above Ridge Farm, 1915, *Monckton*.

*1601. *H. pinnatifidum*, Lonnr., var. *vivarium*, Lonnr. St. Sebastian, Wokingham, 1916, *Monckton*.

*1607. *H. maculatum*, Sm. 1 Buckland.

1609. *H. sciaphilum*, Uechtr. 3 Bradfield. Pangbourne, *Murray*.

1610. *H. cacuminatum*, Dahlst. 5 Near Sandhurst.

1629. *H. tridentatum*, Fr. 4 Brimpton. *Var. *acrifolium*, Dahlst. 4 Aldermaston. 5 Blackwater, *Marshall*, l.c. *Var. *setigerum*, Ley, Wellington College.

1630. *H. rigidum*, Fr. *Var. *trichocaulon*, Dahlst. 5 Wellington College, *Monckton*. Easthampstead.

1638. *H. umbellatum* L. 3 Tilehurst.

*Var. *coronopifolium*, Fr. Sandhurst, *Monckton*.

1637. *H. boreale*, Fr. 3 Pinge Wood, Pangbourne, *Murray*. Tilehurst. 5 Burghfield.

*Var. *Hervieri*, Arv. Touv. 2 Boar's Hill. 4 Enborne St., *Druce* in *Journ. Bot.* 199, 1910.

*Var. *virgultorum* (Jord.) 3 Between Tilehurst and Sulcham, *Druce*, l.c.

*Var. *rigens* (Jord.) 5 Near Wellington College.

1461. *Hypochoeris glabra* L. Abundant near Frilford in 1912, since almost disappeared. 5 Roadside near Virginia Water, *Wallis*.

1642. *Leontodon hispidus* L. Roman Silchester.

1645. *Taraxacum laevigatum* DC. (*erythrospermnm*). 2 Kingston Bagpuize.

1645. *T. obliquum*, Dahlst. (*laevigatum, Fl. Berks*). 2 Frilford.

1645. *T. vulgare*, Schrank, (*officinale*). *Var. *alpinum, Koch*. 1 Wytham. *Var. *taraxacoides*, Koch. 2 Boar's Hill, teste Freyn.

1646. *T. paludosum*, Schlecht. (*palustre*). 5 Near Loddon Bridge.

1648. *Lactuca virosa* L. 5 Near Whitley Wood, *Summers*. Waste land, Reading, *Wallis*. Var. *integrifolia*, Gray. Twyford.

1651. *L. muralis*, Fresen. 2 Cholsey, *Henslow*, 1825. Frilford. 5 Sonning, Strathfieldsaye.

[1655. *Sonchus palustris* L. Seeds in Roman Silchester, probably introduced among the reeds for roof-thatching. Long ago extinct there. The plant still exists in the Oxford habitat, where it was discovered by the Rev. E. Ellman.]

1658. *S. oleraceus* L. Roman Silchester. *Var. *albescens*, Neum. Boar's Hill.

1671. *Campanula glomerata* L. First record, near Oxford, *Sibth. MS.* 1780. 2 Abundant between Blewbury and Moulsford. 4 Newbury, *Bicheno*, 1825. Wellington Coll., *Monckton*.

[1672. *C. latifolia* L. 5 White Knights, *I. Carroll*, 1849, in *Hb. Br. Mus.*, doubtless from the gardens.]

1673. *C. Trachelium* L. 2 Besselsleigh, *Miss Walker*. Betn. Ashbury and Kingston Lisle, *Bellamy*. 3 Near Unwell Wood, with glabrous calyx, *C. F. Vincent*. 2 Uffington Wood, forma *alba, R. Clement*.

1674. *C. rapunculoides* L. 2 Besselsleigh, *Miss Walker*. 3 Near Pangbourne, *Miss Vachell*, 1916.

*1676. *C. persicifolia* L. First found by Mr. J. R. W. B. Tomlin in 1910, on a common among gorse bushes, plentifully, in the Kennet valley near Newbury. See note by the writer in *Rep. Bot. Exch. Club*, 576, 1910. A most interesting addition to the Flora. Here it has quite the appearance of a native species which (unless purposely introduced) I think it to be. The only other possibly native station known in Britain is Gloucestershire.

*1679. *Legousia Speculum-veneris*, Fisch. 5 Nr. Hurst Mill. Alien.

1693. *Calluna vulgaris*, Hull (*Erica*). *Sub-var. *speciosa*, Druce. 5 Wellington College, *R. H. Corstorphine* and *Druce*.

1694. *Erica cinerea* L. 4 Englefield. 5 Bagshot, *Sibthorp*, 1780.

*1706. *Rhododendron ponticum* L. Seeding freely at Aldermaston. 5 Virginia Water, Ascot. Bearwood, &c. Alien.

1709. *Pyrola minor* L. 5 Wellington College, *Monckton*.

1712. *Hypopitys Monotropa*, Crantz. Goodenough in *Smith Corresp.* 557, says 'Sir Henry Parker sent it me from Great Marlow many years ago when I was a young botanist.' 3 Ashhampstead Wood, *J. H. Vince*. Wood near Henley, *Petiver Hort. Sicc.* in *Hb. Br. Mus.*

1723. *Hottonia palustris* L. 4 Near Three Mile Cross, *Murray*, 5 Between Henley and Remenham, 1836, *Mrs. Davenport*, (? Bucks).

1725. *Primula vulgaris*, Huds. (*acaulis*). With flowers about half the normal size at 4 Welford, *Mr. Ross*.

P. vulgaris × *veris*. A one-flowered form with filiaceous calyx, Boar's Hill, 1899, also at Yattendon, *Rev. A. Simeon*. Hawkridge. The first record for the hybrid is 'This Oxslip, when first found in Cumner Wood not far from Ensham Ferry, had betwixt fower score and a hundred flowers fully blowne, besides what was not sprung out,' f. 141, *M. Dodsworth*, c. 1680. See *Britten. Journ. Bot.* 101, 1909.

1726. *P. veris* L. First record: 'About the 8 of May Twas found and gathered a cowslip in Philipson's leas in the parish of Commore (Cumnor) Berkz, having a stalk a foot long, 2 inches and a half aboutin bigness: flowres on it 258 and the circumference about them 14 ainches and a half. This relation I sent to the Royall Society and (it) is entred in their Publick Register. Colonel John Peacock had it and he gave it me on Holy Thursday even (27 May) when I was with him.' *Wood's Life and Times*, 1674, Ed. A. Clarke, Oxford, 1892.

1733. *Lysimachia vulgaris* L. Var. *angustifolia*. Lower end of Virginia Water, *H. C. Watson* in *Kew. Herb.*

1736. *L. Nummularia* L. After many years' unsuccessful search I found this, in company with Mr. Broome, in 1899 fruiting on a hedge-bank near Hurst, and again in 1904. Syme (*Eng. Bot.*) states he has never seen ripe fruit. The capsule resembles that of *L. nemorum*.

1737. *L. nemorum.* 3 Hawkridge. 4 Snelsmore, *Bicheno*, 1815.

1742. *Anagallis femina*, Mill. 2 Wootton Fields, near Abingdon, *Bicheno*, as *A. caerulea*, figured from this specimen in *Hooker Fl. Lond.* t. 159. Botley, *Gambier Parry.* 3 Tidmarsh Mill, *Murray*, Reading ballast.

1743. *A. arvensis* L. Roman Silchester. 'Pimpernell with an elegant white flower. I found it in a field by South Hinksey, 2 miles from Oxford,' *M. Dodsworth*, c. 1690, see *Journ. Bot.* 101, 1909. *Var. *verticillata*, Diard. Wytham.

1744. *A. tenella*, Murray. First record, *A. palustris rotundifolia repens purpurascente flore tubulata* prope Chilswell, *Dillenius MS.* 1746. 2 Abingdon meadow.

1746. *Samolus Valerandi* L. 1 Base of Cumnor Hill, *Bellamy*. Very rare in a ditch opposite Cassington. 3 Basildon, *G. Parry.* 4 Burghfield, *Stansfield.*

†1747. *Syringa vulgaris* L. 2 Frilford, in some plenty. Alien.

†1750. *Vinca major* L. First record, circa Oxford, *Sibth. MS.* 1780. 3 Bradfield, *Murray*. Betn. Tidmarsh and Theale. 5 Sunningdale.

†1751. *V. minor* L. First record, about Oxford, *Sibth. MS.* 1780. 2 Frilford. 3 Yattendon. Hawkridge, *R. H. Hooker.* A garden form with dark purple flowers in orchard hedge, Bucklebury, *Wallis.*

1753. *Blackstonia perfoliata*, Huds. 2 Near Ashbury, *Rev. L. Hamerton.* 4 Between Inkpen and Coombe, *Summers.*

1754. *Centaurium umbellatum*, Gilib. (*Erythraea*). First record, *C minus vulg. fl. rubente*, about Wytham, *Dillenius MS.* 1746.

1763. *Gentiana Amarella* L. Var. *praecox*, Raf. 3 Churn. Forma *alba*, Ashbury, *Rev. L. Hamerton.*

1766. *G. germanica*, Willd. 3 Streatley, *Miss Todd and G. Parry*, 1917, thus confirming Pamplin's record which I had queried. 4 Shalbourne, *C. P. Hurst.* Coombe Hill.

**G. Amarella* × *germanica* = *G. Pamplini*, Druce in *B.E.C.* 379, 1892. See Wettstein's Monograph, 56, 1896. 2 Letcombe. 4 Coombe. Shalbourne, *C. P. Hurst.* Distributed through the *B.E.C.* by the writer in 1892.

1766. *Menyanthes trifoliata* L. First record, circa Oxford, *Sibth. M.S.* 1780. 2 Iffley meadows. 4 Boxford.

1767. *Nymphoides peltatum*, Kuntze (*Limnanthemum*). 5 Thames at Ankerwyke, *Goodenough* in *Sm. Fl. Brit.* 226, 1800.

†1777. *Polemonium caeruleum* L. Sutton Courtney, *Mrs. Lindsay*, 1913.

*1767 (10). *Phlox paniculata* L. Alien. Cothill, 1915.

1784. *Cynoglossum officinale* L. 1 Pusey. 2 Radley. 4 Southcote, *Murray.*

†1797. *Lappula echinata*, Gilib. 2 Cothill.

†1792. *Symphytum peregrinum*, Ledeb. (*asperrimum*). 1 Cumnor. 2 Fyfield. Pusey. 4 Hungerford, *Hurst*.

1790. *S. officinale* L. Var. *patens* (Sibth.). 3 Pangbourne, *Herb. Bab.* 1847.

†1796. *Borago officinalis* L. First record, circa Oxford, *Sibth. MS.* 1780. 4 Englefield, *Murray*.

†1798. *Anchusa sempervirens* L. 2 Lockinge.

*1799. *A. undulata* L. Cothill, 1910. Alien.

†1800. *A. officinalis* L. 2 Boar's Hill, *E. D. Watkin*. Cothill, 1907-8. Abingdon, *Gambier Parry*.

*1802. *A. azurea*, Mill. (*italica*). 2 Cothill, 1907. Var. *Dropmore*, in a quarry, Marcham. Alien of garden origin.

*A. *ochroleuca*, M. Bieb. 2 Cothill, 1908. A chicken-food alien.

*1810. *Asperugo procumbens* L. 4 Speen, *Jackson*.

1813. *Myosotis palustris*, Hill., var. Wytham Woods in the ridings on muddy ground.

1814. *M. repens*, Don. 4 Padworth, *Summers*. 5 Wellington Coll.

1817. *M. sylvatica*, Hoffm. Casual. 3, a few plants among gorse, Bucklebury Lower Common, *Wallis*. 5 In woodland about Bracknell, but probably of garden origin.

1820. *M. collina*, Hoffm. 2 Kingston. Lowbury. 3 Moulsford, Basildon. Var. *Mitteni*, Baker. 2 Cothill. Kingston Bagpuize.

1822. *Lithospermum officinale* L. 1 New Bridge. 2 Betn. Ferry Hinksey and Cumnor Hurst. Betn. Bagley and Wootton.

1824. *L. arvense* L. First record, about Oxford, *Sibth MS.* 1780. 2 Besselsleigh, *Walker*.

1825. *Echium vulgare* L., forma *rosea*. Wytham, *A. Murray*. c Greenham, *Bicheno*, 1815.

*1826. *E. italicum* L. Var. *pyramidale* (Lap.). Alien. 2 Cothill, 1907-10. *B.E.C.* 39, 1917, and 303, 1907.

1831. *Volvulus sepium*, Medic. First record, circa Oxford, *Sibth. M.S.* 1780.

1833. *Convolvulus arvensis* L. Mr. Stonestreet's Henley plant (*Herb. Dubois* about 1690) I have named *var. *Stonestreeti* in *B.E.C.* 330, 1913. It is also alluded to as *C. minor quinquepartitus*, Maidenhead Bridge, *Petiver Hort. Sic.* in *Hb. Br. Mus.*

*Var. *linearifolius*, Choisy. 2 Frilford, *Druce* in *B.E.C.* 422, 1916.

1838. *Cuscuta europaea* L. 4 In a lane leading from Greenham Common to Chamberhouse, near Newbury, *Mr. Bicheno*. It is found elsewhere in the county, *Hooker Fl. Lond.* iii, t. 67. In great abundance in hedge near Sandford Bridge, growing on hop and nettles, 1903.

1839. *C. epithymum*, Murr. First record, Bagshot, *Sibth. MS.* 1780, as *europaea*. 3 Ashampstead. Streatley and 4 Southcote, *Murray*. 5 Coleman's Moor, *Wallis*. Finchampstead..

*1843. *C. Tinea*, Insengi. Streatley, *F. Murray*, 1915. Alien.

†1844. *Lycopersicon esculentum*, Hill. Abingdon. Reading. 5 Near Wellington College.

1845. *Solanum Dulcamara* L. Roman Silchester. Var. *tomentosum*, Koch. Near Pangbourne, *Hb. Babington*, 1847.

1846. *S. nigrum* L. 1 Wytham. 2 Besselsleigh, *Miss Walker*. Cothill. Abingdon. 3 Bradfield, *Sheppard*.

1854. *Atropa Belladonna* L. Roman Silchester. 5 Sonning, *Summers*.

†1855. *Datura Stramonium* L. 2 Sutton Courtney, *Lindsay*. Radley. Beenham and 5 Maidenhead, *Wallis*.

1856. *Hyoscyamus niger* L. First record, circa Oxford, *Sibth. MS.* 1780. 1 Wytham Mill. 2 Besselsleigh, *Miss Walker*. Radley. 3 Tidmarsh Mill. Yattendon, *Murray*. 5 Clewer, *Everett*.

*1851 (3). *Physalis ixocarpa*, Brot. First found at Abingdon by *Miss Nancy Lindsay*. A Mexican alien.

*1859 (3). *Nicotiana Tabacum* L. Abingdon, 1918, *T. Gambier Parry*. Alien.

1866. *Verbascum Lychnitis* L. 4 Bradfield, *E. F. Witts MS.* 1836. 5 Plentiful on newly-turned soil near Twyford Station in 1899, but soon disappeared. In 1904 it was again seen. Wargrave, 1905, *Stanton*.

1867. *V. nigrum* L. 4 Aldworth. 5 Upton, *Murray*.

†1864. *V. Blattaria* L. 5 Park Place, Wargrave, 1904, *Stanton*.

†1877. *Linaria purpurea*, Mill. 2 Sutton Courtney. Abingdon.

1878. *Linaria repens*, Mill. Henley spec. were issued in *Dickson's Fasc.* xvii, 1799, n. 18, 2 Benson Lock, *Towndrow*, 1855.

1885. *L. Elatine*, Mill. 1 Pusey, *Boswell*. 4 Mortimer, *Summers*.

†1886. *L. Cymbalaria*, Mill. This is stated in *Herb. Sowerby* (*Hb. Br. Mus.*) to have been 'planted on Windsor Castle by Sir Joseph Banks and Dr. Lind.'

†1889. *Antirrhinum majus* L. 2 Cothill. Abingdon. Kingston Bagpuize.

1890. *A. Orontium* L. 1 Buckland, *Mrs. Milne*. 2 Besselsleigh, *Miss Walker*. Cothill.

1891. *Scrophularia vernalis* L. Figured in *Hooker Fl. Lond.* from a spec. 'from a lane leading from Bucklebury Church to Marsden.'

1892. *S. aquatica* L. 3 in Sulham Woods it attained a height of 9 feet.

*1893. *S. alata*, Gilib. First found by C. P. Hurst, 1915. See *Bot. Exch. Club*, 204, 1915. 4 Kennet. By the Shalbourne brook on the border of Wilts.

S. alata × *aquatica* = *S. Hursti*, Druce in *B.E.C.* 204, 1915, growing with both parents in this locality, a previously undescribed hybrid found by Mr. Hurst.

1894. *S. nodosa* L. *Var. *appendiculata*, Merat. Cothill, 1916. Var. *Bobarti*, Pryor. 2 Near Radley, *M. Odling*.

1901. *Limosella aquatica* L. 4 By the Enborne Stream, *Jackson*, 1906. [It has been refound at Binsey in Oxfordshire close to the Berks border.]

1907. *Veronica officinalis* L. First record, circa Oxford, *Sibth. MS.* 1780. 1 New Bridge.

1909. *V. montana* L. First record, near Virginia Water, *Dr Goodenough*, *Sm. Fl. Brit.* 1800. 3 Hawkridge. Hampstead Norris.

1911. *V. Beccabunga* L. First rec., circa Oxford, *Sibth. MS.* 1780.

1912. *V. Anagallis* L. sens stricte. 2 Hinksey. 3 Hampstead Norris, &c

*1912 (2). *V. aquatica*, Bern. Near Abingdon.

1924. *V. agrestis* L. First record, fields near Wallingford, *E. F. Witts*, 1836.

**V. speciosa*, R. Cunn., Recorded (as *spectabilis*) from Wargrave by *Mrs. Climenson*. A New Zealand species.

*1931. *Euphrasia stricta*, Host. First found by the writer at Cothill in 1903.

*1932. *E. brevipila*, Burnat & Gremli. Wellington Coll. on Schist and on Bagshot Sand, *Monckton*, 1913.

1934. *E. nemorosa*, Pers. Our common species. *Var. *ciliata*, Buckn. Wellington Coll. on Bagshot Sand, *Monckton*. Billingbear on London Clay.

*1935. *E. curta*, Fr. 3 Blewbury Downs. Var. *glabrescens*, Wetts. East Berks Golf Links, *Monckton*.

*1941. *E. Rostkoviana*, Hayne. First record, the writer, 1901. 5 Coleman's Moor, 1901. Wellington Coll. Wokingham. Easthampstead. East Berks Golf Links on Bagshot Sand, *Monckton*.

*1943. *E. Kerneri*, Wetts. First found by the writer. 3 Ilsley Downs. 4 Walbury Camp, 1899.

1949. *Pedicularis palustris* L. 2 Abundant near Sutton Courtney.

1954. *Rhinanthus stenophyllus*, Schur. (*angustifolius*). 4 Newbury.

1960. *Melampyrum pratense* L. *Var. *montanum* (Johnst.). 2 Birch Copse, *Holliday* in *Hb. Druce*.

*Var. *commutatum* (Beauv.) *sub-var. *concolor* (Schonh.). Bagley Wood, *Baxter* in *Hb. Druce*.

*Sub-var. *laurifolium* (Beauv.). 3 Oarebury. Bere.

*Sub-var. *digitatum* (Beauv.). 5 Near Crowthorne.

1966. *Orobanche major* L. 1 Wytham, 1917. 2 Sutton Courtney, *Mrs. Lindsay*. Didcot. 4 Reading, *Stansfield*. Coombe Hill. Chilton Foliot, *Summers*.

*1969. *O. picridis*, Schultz. First found by the writer in 1908. 3 Streatley teste Beck von Managhetta.

1971. *O. minor*, Sm. (*Trifolium-pratense*). 1 Littleworth. 2 Wantage, *Murray*. Tubney, Cherbury, Marcham. 4 Burghfield, *Murray*.

1974. *Lathraea Squamaria* L. 4 Riever Wood, *Hurst.*

*1988. *Mentha rotundifolia*, Huds. First record, 3 Railway near Hampstead Norris, *Jackson*, l.c. 28, 1912.

*1990. *M. rotundifolia* × *spicata.* Pangbourne, *Dr. F. J. Smith.*

1990. *M. longifolia*, Huds. 2 Cothill. Sutton Courtney. 5 Wargrave, *Stanton.*

1901. To the var. *villosa* (Soie), which M. Briquet treats as a hybrid of *rotundifolia* crossed with *longifolia* and *spicata*, belong plants found near Abingdon. Besselsleigh.

†1991. *M. spicata* L. 4 Southcote. 2 Abingdon.

1993. *M. piperita* L. 1 Carswell, *Niven.*

1996. *M. verticillata*, Huds. *Var. *Motoliensis*, Opiz. f. *purpurea.* 1 Wytham. *Var. *elata*, Host. 1 Godstow. Wytham.

1999. *M. rubra*, Huds.3 Moulsford Downs, *Miss Neild.* Tilehurst. 4 Newbury, *Bicheno.*

2000. *M. arvensis* L. *Var. *Skozitziana*, Kern. 1 Godstow.

2001. *M. Pulegium* L. Clay Hill, an erect form, *Wallis.*

2003. *Lycopus europaeus* L. First record, circa Oxford, *Sibth. MS.* 1780. Sonning, *Herb. Rudge*, 1800. *Var. *glabrescens*, Schmidely. 2 Kennington, &c.

2004. *Origanum vulgare* L. 4 Newbury, *Bicheno*, 1815.

2007. *Thymus ovatum*, Mill. (*Chamaedrys*). 2 Frilford, Tubney. 4 Brimpton. 5 Sandhurst, *Marshall*, l.c. Coleman's Moor. Earley.

2013. *Satureia Acinos*, Scheele (*Calamintha arvensis*). 1 On a wall at Pusey. 2 Besselsleigh. Frilford. 3 Purley, *Murray.* Eastfield, Newbury, *Bicheno*, 1812.

2023. *Salvia pratensis* L. 2 One plant in field, Besselsleigh. 2 Upton, *Miss Fry.* 3 Moulsford Downs, *Miss Neild.* Between Hermitage and Yattendon, *R. H. Hooker.* 4 Weston, 1905, *Osmond.* Only of sporadic occurrence in Berks.

†2031. *S. verticillata* L. 2 Cothill. Abingdon. Near Oxford on railway. Sinodun Hill, *J. H. Vince.*

2036. *Salvia Verbenaca* L. First record, circa Oxford, *Sibth. MS.* 1780. 4 Donnington Castle, *Bicheno.*

2043. *Scutellaria minor*, Huds. 4 N. side of Bucklebury Common, *Wallis.*

*2046. *Prunella lacinata* L. First found by Mr. H. Weaver at 3 Tilehurst in 1903. See *Rep. of B.E.C.* 199, 1906.

2044. *P. vulgaris* L. Roman Silchester.

*Var. *nemoralis*, Beg. 2 Hinksey, &c., *Druce in B.E.C. Rep. for* 1915.

*2048. *Sideritis montana L.* 4 Near Newbury, *Miss Beales.* Alien.

†2049. *Marrubium vulgare* L. 5 Clewer, *Everett.*

2057. *Stachys palustris* L. *Var. *oblongifolia*, Briq. S. Hinksey. 3 Tilehurst.

2058. *Stachys arvensis* L. Roman Silchester.

†2059. *S. annua* L. 2 Cothill.

2061. *Galeopsis speciosa*, Mill. Between Shaw and Ham by the river, *Comyns*, 1905.

2062. *G. Tetrahit* L. Roman Silchester. Var. *nigricans*, Bréb. 2 Boar's Hill. 5 Sandford Mill. Crowthorn.

†2069. *Lamium maculatum* L. 2 Near Sutton Courtney.

2072. *Lamium hybridum*, Vill. 3 Sulham, *Wallis*.

2073. *L. purpureum* L., and 2077 *Ballota nigra* L. Rom. Silchester.

2080. *Teucrium Scordium* L. 1 Wytham meadows. A most interesting discovery of a very rare species. The last Berkshire record was by Lightfoot in 1780.

*2085. *Ajuga genevensis* L. First record, *Miss Fry* in *Bot. Soc. & E. C. Rep.* 137 (1917), 1918.

This was discovered on the Berkshire downs by Miss Fry last June, who brought me a specimen, which she saw was distinct from *reptans*. From a plate in Hill's Herbal she thought it might be *alpina*. However there could be no doubt that the plant was *genevensis*. On visiting the locality shortly after under Miss Fry's guidance we found the plant growing under the shelter of gorse and where (if not intentionally introduced) the plant seems native. The situation is not near houses nor is *genevensis* often cultivated in British gardens. This is the first definite British record, for although the name appears in our Floras it is owing to confusing it with the northern *pyramidalis*, a quite distinct plant.

2090. *Plantago Coronopus* L. *Var. *tenuisecta*, Wirtg. Boar's Hill.

†2089. *P. indica* L. (*arenaria*). 2 Cothill.

2092. *P. lanceolata* L. Roman Silchester. First record, circa Oxford, *Sibth. MS.* 1780. *Var. *elliptica*, Druce. 1 Wytham. 2 Frilford. 4 Wickham, *Miss Todd*.

2098. *P. media* L. First record, circa Oxford, *Sibth. MS.* 1780. Newbury, *Bicheno*, 1815. *Var. *lanceolatiformis*, Druce. 3 Streatley.

2099. *P. major* L. First record, circa Oxford, *Sibth MS.* 1780. *Var. *megastachya*, Wallr. Hinksey.

2101. *Littorella uniflora*, Asch. (*juncea*). 3 Bucklebury Lower Common, *Wallis*. First record, 5 circa Bagshot, *Sibth. MS.* 1780.

2102. *Illecebrum verticillatum* L. This has either spread from the original locality to other places about Wellington College, or it may previously have been overlooked. Mr. T. Gambier Parry found it near King's mere.

†2110. *Amaranthus retroflexus* L. Abingdon, *Miss Lindsay*. 3 Reading. 5 Clewer, *Everett*.

*2114. A. *chlorostachys*, Willd. Var. *aristulatus*, Thell. 2 Abingdon, *Miss N. Lindsay* and *Druce* in *B.E.C. Rep.* 123, 1917. A skin alien.

2117. *Chenopodium rubrum* L. Roman Silchester. Var. *pseudobotryodes*, Wats. 5 Hurst.

2119. *C. Bonus-Henricus* L. First record, circa Oxford, *Sibth. MS* 1780. 1 Cumnor. 4 Thatcham, *Summers.* Boxford. Roman Silchester.

2120. *C. hybridum* L. 4 Reading, *Downes*, 1831. Newbury, *Bicheno*, as *rubrum.*

2122. *C. murale* L. 2 Abingdon, *Miss Lindsay*, plentiful. 5 Clewer *Everett.* Near Windsor.

*2123. *C. opulifolium*, Schras. 1 Wytham.

2124. *C. album* L. *Var. *lanceolatum* (Muhl.). 2 Abingdon.
*Var. *glomerulosum*, Reichb. By the Thames near Oxford.
**C. album* × *striatum.* Abingdon.

*2125. *C. leptophyllum* (Nutt.). 2 Abingdon. 3 Reading, 1908.
**C. striatum*, Kras. 2 Abingdon, 1917, *Druce* in *Rep. B.E.C.* 124, 1917. Alien.
**C. hircinum*, Schrad. 2 Abingdon, *Druce*, l.c. Alien.

2129. *C. polyspermum* L. First record, circa Oxford, *Sibth. MS.* 1780. 1 Buscote. 3 Sulham, *Murray.* Clay Hill, *Wallis.*
Var. *spicatum*, Moq. 3 Tilehurst. 5 Loddon Bridge, *Murray.* Var. *cymosum*, Chev. Clewer, *Everett.* Finchampstead.

†2136. *Beta trigyna*, W. & K. 4 Lambourn railway, *Comyns.*

2144. *Atriplex patula* L. Roman Silchester.

2148. *A. deltoidea*, Bab. The earliest evidence is a spec. in *Herb. Bab., J. A. Power*, 1838.

*2155. *Kochia scoparia*, Schrad. Reading, near the railway, *B.E.C.* 241, 1906. Alien.

*2168. *Salsola Kali* L. Waste ground near Reading, *Wallis.* Alien.

2169. *Polygonum dumetorum* L. 5 Coleman's Moor, *Wallis.* Occurs about Tubney in great quantity one year, then disappears more or less and as suddenly shows itself after a lapse of seven or eight years.

2170. *P. Convolvulus* L. Roman Silchester. First record, circa Oxford, *Sibth. MS.* 1790.

2171. *P. Bistorta* L. 5 Coleman's Moor, near the Loddon.

2173. *P. amphibium* L. Circa Oxford, *Sibth. MS.* 1780.

2175. *P. Persicaria* L. Roman Silchester.

2179. *P. minus*, Huds. *Var. *albidum*, Braun. 2 St. Neot's meadow. 5 Hurst.
*Var. *dubium*, Braun. Hurst

*2183. *P. patulum*, Bieb. Abingdon. Alien.

2184. *P. aviculare* L. First record, circa Oxford, *Sibth. MS.* 1780. Roman Silchester.
**P. heterophyllum*, Lindman. This is the common plant in Berkshire. Under it come vars. *vulgatum, microspermum, rurivagum* and **erectum* (Frilford), and also **denudatum*, Desv. From saline meadow, Marcham. See *Fl. Berks*, 425.
**P. heterophyllum* × *aequale*, Lindm. Tubney.

**P.* *aequale*, Lindm., under this comes the greater portion of var. *arenastrum* (Bor.). 1 Wytham. 2 Boar's Hill. 3 Tilehurst. 4 Newbury. 5 Wokingham.

*2191. *P. cuspidatum*, Sieb, & Zucc. 2 Nr. Wantage Road. Abingdon. A Japanese alien.

2198. *Rumex crispus* L. First rec., circa Oxford, *Sibth. MS.* 1780.

*Var. *unicallosus*, Beck. Godstow, &c.

2200. *R. obtusifolius* L. Roman Silchester. First record, circa Oxford, *Sibth. MS.* 1780.

*Var. *agrestis*, Fries. Near Oxford.

2203. *R. conglomeratus* L. First record, circa Oxford, (as *R. acutus*), *Sibth. MS.* 1780. Roman Silchester.

2205. *R. pulcher* L. 2 Wallingford. 4 Between Kintbury and Hungerford, *Summers.* Hopgrass Farm, *Hurst*, 1913.

2209. *R. Acetosa* L., and 2201 *R. Acetosella* L. First record, circa Oxford, *Sibth. MS.* 1780.

*Var. *acetoselloides*, Bal. 2 Frilford, &c.

2212. *Asarum europaeum* L. 5 Between Henley and Medmenham, *Dr. Abbott*, 1802. In *Hb. Sowerby* it is said to grow by the roadside, and a plant was used for the E. B. plate. The locality may be the Bucks' side of the Thames, but it has not recently been observed. 4 Hawkridge, *R. H. Hooker*, 1915, and *Miss Kirk.* Here it grows in some quantity in a woodland. At one time, I am told, there was a cottage near. If originally introduced it is now quite naturalised. See note by the writer in *Rep. B.E.C.* 369, 1915.

2214. *Daphne Laureola* L. 2 Lowbury. 3 Between Ashbridge and Aldworth, *Murray.*

2217. *Viscum album* L. On *Populus deltoidea* at 4 Boxford. 5 Windsor Park, the favourite trees are the lime, the poplar, the thorn and the maple, *Menzies*, *Windsor Park*, 1864. On oak in Windsor Forest, *Sir Herbert Maxwell* in *Memories of the Months*, 285. Sunningwell. Surley. Bagshot, &c.

2218. *Thesium humifusum* DC. 2 Cherbury Camp, 1913. Cholsey, *Henslow*, 1835.

*2223. *Euphorbia platyphyllos* L. First certain record, 4 Wheat-field near Hampstead Marshall, *A. B. Jackson*, l.c., 360, 1906.

*2229. *E. Esula* L. 2 Riverside between Cholsey and Wallingford, *R. F. Towndrow* in *Journ. Bot.* 400, 1900, as var. *pseudo-cyparissias.* (Not in my opinion that variety). 4 Welford Park, *Osmund*, naturalised with *Aconitum Napellus.* Wasing, *Comyns.* 2 Marcham, and as *var. *lutescens*, Huth. See *Journ. Bot.* 200, 1910.

2232. *E. Cyparissias* L. 3 Churn, *Miss Fry.* 4 Wasing, *Comyns.* Welford Park with *Aconitum Napellus*, naturalised. Brimpton. Perhaps native.

†2241. *Buxus sempervirens* L. 2 A large tree at Kingston Bagpuize.

†2243. *Mercurialis annua* L. 3 Reading, abundant, 1915. 5 Windsor, in garden ground, *Hon. Mrs. Guy Baring.*

*2244. *Ulmus major*, Sm. 2 Wallingford, Kingston Lisle, &c.

**U. vegeta*, Schneider. A hybrid of *U. montana* and *glabra*, Mill. 2 Kennington, Wallingford. 3 Moulsford, &c.

U. sativa, Mill. (*campestris auct.*). The trees in the Broad Walk at Windsor were planted about 1680.

**U. stricta*, Lindley, including *U. Wheatleyi* (*sarniensis*). 1 Appleton. Cumnor. 2 Radley. Between Hanney and Frilford. Wallingford. Kennington. 3 Moulsford.

U. glabra, Miller (*U. nitens*, Moench). 1 Buscote. 2 Fine trees at Besselsleigh, Frilford, Kingston Lisle, Tubney, Kingston Bagpuize, Radley, Abingdon, &c. 4 Newbury. 5 Sunningdale. (*U. carpinifolia*, Borck.).

†2248. *Cannabis sativa* L. 2 Abundant in a field of vetches near Wallingford, 1912.

2250. *Urtica dioica* L. Roman Silchester with *U. urens* L.

*2248. *Ficus Carica* L. A self-sown plant grew to a considerable size near the reservoir at Didcot. It was eventually removed to a garden. Roman Silchester.

2253. *Parietaria ramiflora*, Moench. *var. *fallax*. Kingston Bagpuize.

2255. *Betula alba* L. First record found (*Dicranum heteromallum*) under the birch trees in Childswell Copse, *Bobart* in *Herb. Ox. circa* 1697. 1 Buscote. 2 Besselsleigh, Cothill. 3 Tilehurst. 4 Burghfield.

2256. *B. pubescens*, Ehrh. Windsor Park, a tree 71 feet high by 8 ft. 8 in. in girth.

2258. *Alnus glutinosa*, Gaertn. Aldermaston, a pollard tree in Park, 17 ft. 4 in. in girth, in 1906, *Elwes & Henry, Trees*, iv. 942.

*Var. *microcarpa*, Uecht. Kennington. Cothill. Wytham. Pangbourne. Aldermaston. Bray.

2260. *Corylus Avellana* L., and 2261 *Quercus Robur* L. Roman Silchester. In *Menzies' Hist. Windsor Great Park*, 1864, there are photographs including that of Queen Victoria's oak, 70 ft. high by 11 ft. 6 in. in girth, estimated at 250 years, and a pollard oak in Forest Gate, 26 ft. 10 in. in girth, probably 800 years old. The King's oak is figured in *Gard. Chron.*, Sept. 6, 1874, it had a girth at 6 feet from the ground of 38 feet. Matthew Arnold's Elm Tree on Boar's Hill is an oak which at 4 feet from the ground had a girth of 87 inches in 1910.

*2263. *Q. Cerris* L. Wellington College. Bracknell. Planted.

†2265. *Castanea sativa*, Mill. 2 Bagley, self-sown, also 5 Bearwood, Windsor Forest, &c. First evidence, Hurst, *Herb. Rudge*, 1800.

2266. *Fagus sylvatica* L. In Windsor Park, *Menzies*, l.c., says the Great Beech on Manor Hill is 100 feet high with girth 21 feet, Age 450 years; Old Pollard Beech at Ascot Gate, girth 30 feet, 800 years. Near Cranbourn Tower there is a tree 150 feet high.

2273. *Salix Smithiana*, Willd. 1 Eaton Hastings.

†2288. *Populus alba* L. 5 Finchampstead.

2289. *P. canescens*, Sm. 4 Boxford. Theale.

2290. *P. tremula* L. 2 Bagley, *Baxter*, 1823. Churn.

*2293. *P. deltoides*, Marsh. This is for the greater part the *P. nigra* of *Flora Berks.* It is an alien in Britain.

2293. *P. nigra* L. *vera.* Rare in Berks. 2 Wantage Road. 5 Windsor.

†*Var. *Henryana.* 5 The Wilderness, White Knights, *A. Henry.*

*2294. *P. Tacamahacca*, Mill. (*candicans*). Frequently planted. Of American origin. 2 Nr. Bagley. Radley. 3 Pangbourne.

2299. *Hydrocharis Morsus-ranae* L. 1 Wytham.

2304. *Neottia Nidus-avis*, Rich.. 2 Uffington. 4 Nr. Aldermaston Soke, *Summers.*

2308. *Spiranthes spiralis*, Koch (*Gyrostachis*). First record, *Orchis parv. autumnalis.* Near Henley, *Petiver Hort. Sicc.*, circa 1700. 4 Near Three Mile Cross, *Dr. Ashby* and *Stansfield.*

2313. *Cephalanthera Damasonium*, Druce (*pallens*). 2 Betn. Uffington and Kingston Lisle, *Dr. Shadwell.* King Standing Hill. 3 Rowstock, *W. W. Taylor.*

2316. *Helleborine latifolia*, Druce (*Epipactis*). 2 Uffington, *Clement.* 5 Sandhurst.

2318. *H. media* (Fries) Druce. 4 Aldermaston. 5 Sandhurst, *Monckton* (and as *atrorubens*).

*Var. *platyphylla*, Druce. 5 Bisham. Bearwood.

2319. *H. purpurata*, Druce (*violacea*). 4 Westbrook, *Peake.* Welford Park, *Osmund.*

2317. *H. palustris*, Schrank. 2 Abingdon meadows.

2321. *Orchis militaris* L. Moulsford Downs, 1907.

2322. *O. Simia*, Lam. 3 Streatley, *Holliday*, 1913.

2323. *O. ustulata* L. Lambourn Downs, *Bell*, 1838.

2324. *O. morio* L. First record, *Smith, E.B.*, 1809.

*2325. *Orchis praetermissa*, Druce. This species which the writer described from Oxfordshire, Berkshire and Hampshire specimens is now found to be widely spread in Britain. In Berkshire it occurs at—1 Wytham Meadows. 2 Cothill, Frilford, Abingdon, Radley. 4 Aldermaston Soke, Boxford, Newbury. 5 Coleman's Moor, Hurley, &c. See *B.E.C.* 340, 1913.

**O. praetermissa + Fuchsii*, Druce (*latifolia p.p.*). Wytham. 2 Frilford, Radley, Abingdon, Cothill, &c.

**O. praetermissa × maculata.* 2 Cothill.

**O. praetermissa × incarnata.* 1 Wytham. 2 Cothill.

*2327. *O. maculata* L. *vera* (*ericetorum = praecox*). 1 Wytham as a robust form verging to *Fuchsii* as at 2 Cothill. 3 Cold Ash. 4 Snelsmore. Near Reading, *Hon. N. C. Rothschild*, 1913. 5 Long Moor. Wokingham, *Monckton.* Easthampstead. Swinley. Sandhurst. Coleman's Moor. Sandford Mill. Bagshot Heath. Bracknell, etc. Finchampstead. Common on the heathy commons in 4 and 5. First evidence a specimen from Long Moor, see *Fl. Berks*, 476, 1897.

*2327 (2). *O. Fuchsii,* Druce (*maculata p.p.*). This is the plant of basic soils, stiff clays and chalky ground through the county, occurring in all the districts but practically absent from the acid heathy soils of the south. 5 Wellington Coll. Finchampstead, *Monckton* ! 1 Very abundant and luxuriant in New Bridge Wood. The *sub-var. *albiflora* at Cothill, &c.

2335. *Ophrys apifera*, Huds. 2 Kennington, 1905. 3 Ashampstead, *Sheppard.* Basildon. A spec. near *var. *Muteliae*, Schulze, Wantage, *E. G. Baker* in lit.

2336. *O. muscifera*, Huds. 2 White Horse, *F. Stone.* Reading, *Petiver Hort. Sicc.* 1700.

2337. *Herminium Monorchis,* Ait. 4 Ham Hill, *Summers.* Below Riever Wood, *Hurst*, 1918.

2338. *Habenaria Gymnadenia*, Druce. 3 Tilehurst, *Ashby.*

2340. *H. viridis*, Ait. *Var. *bracteata*, Gray. 4 Gibbet Hill, &c.

2342. *H. virescens*, Druce (*chloroleuca*). 1 Binsey Grove, *Holliday*, 1857. New Bridge.

2349. *Iris Pseudacorus* L. *Var. *Bastardi* (Bor.). Sutton Courtney, *Mrs. Lindsay.*

†2347. *I. germanica* L. 2 Cothill, garden outcast.

[2356. *Crocus nudiflorus*, Sm. Near Yattendon, *Miss Moore.* I have not seen specimen, probably *Colchicum.*]

2364. *Narcissus Pseudo-narcissus* L. 3 Compton. 4 Aldermaston Soke, Shinfield, *Summers.*

†2372. *N. biflorus*, Curtis. 2 Besselsleigh. 3 Hawkridge, *Irvine*, 1914. 5 Maidenhead, *J. Woods* in *Hb. Borrer.*

†2373. *N. poeticus* L. 2 Besselsleigh.

†2377. *Galanthus nivalis* L. 1 Wytham. 2 Kingston Bagpuize. 4 Padworth, *Summers.*

2379. *Leucojum aestivum* L. 3 By the Pang near Bradfield, *Peake.*

2382. *Ruscus aculeatus* L. 3 Pangbourne, *Herb. Babington*, 1847. Tilehurst. Tidmarsh and 4 Calcot, *Murray.*

2385. *Polygonatum multiflorum*, All. 4 Between Theale and Burghfield, *Murray.* 5 Brightwaltham, *Holliday.*

2396. *Allium vineale* L. 2 Cholsey, var. *floribus proliferis*, Henslow, 1835. Frilford. Besselsleigh. Radley. Northcourt.

A. Cepa L. Abingdon racecourse Garden outcast.

*2408. *Hyacinthus comosus* L. (*Muscari*). 2 Besselsleigh, in a larch planting, *H. Fisher*, 1907, still persisting 1915, *Miss Haldane*. Casual at Sutton Courtney, *Miss Lindsay*. Upton, *Miss Fry*, 1898, in vetch field. 3 Streatley, *G. H. Morrell, M.P.*

2407. *Muscari racemosum*, Lam. & DC. 2 Rowstock, a mile from a garden, *Miss M. A. Hazel*. Besselsleigh.

*2411. *Scilla hispanica*, Mill. 2 Cothill. First British record for the alien species, see Druce in *Journ. Bot.* 200, 1910.

2413. *Ornithogalum umbellatum* L. 1 Near Pusey. 2 Cothill escape Bagley. 3 Rowstock in a wheatfield, plentiful, *Miss M. Hazel*, 1903.

†2414. *O. nutans* L. 2 Sutton Courtney, *Miss Lindsay*. Very plentiful and beautiful at Besselsleigh.

2418. *Fritillaria Meleagris* L. Sibthorp records it from near Oxford in 1780. 2 Fulscote, nr. East Hagbourn, *Miss Fry*. Near Strathfieldsaye, *Bromfield* in Phyt. 1850.

*2417. *F. pyrenaica* L. An unlocalised spec. of this alien from Berkshire was sent to Eastbourne Nat. Hist. Soc. in 1914, *F. J. Richards* in lit.

†2419. *Tulipa sylvestris* L. Kingston Bagpuize, *Rev. J. C. Mather*, 1917.

2420. *Gagea lutea*, Ker. (*fascicularis*). Fresh spec. from Berkshire sent by Mr. Bicheno, *Hooker, Fl. Lond.* t. 121. 1 Wytham, *Countess of Abingdon*. 2 Cothill. 3 Hawkridge.

2428. *Juncus conglomeratus* L. *A hybrid with *inflexus* = *J. Leersi* Mars. Field beyond S. Hinksey.

2437. *Juncus bulbosus* L. *Var. *Kochi*. 2 Powder Hill Copse, Bagley. 5 Wellington College.

2438. *J. squarrosus* L. First record, Bagshot, *Sibth. MS.* 1780.

2439. *J. compressus*, Jacq. 2 On Kimmeridge Clay near Boar's Hill.

*2441. *J. tenuis*, Willd. First found near Wellington College by *H. W. Monckton, Bagshot List*, 1916. This alien was there in 1918 and is likely to extend its area.

2442. *J. bufonius* var. *ranarius* (Nees). 5 Virginia Water. Well. Coll. This is thought by Professor Graebner to be a distinct species.

2449. *Juncoides sylvaticum*, Kuntze. 3 Bucklebury Lowe Common, *Wallis*. Hawkridge.

J. pilosum and *J. campestre* (*Luzula*) were both recorded by Sibthorp from about Oxford in 1780.

†*2459. *Phoenix dactylifera* L. Seedlings in abundance on rubbish at Abingdon, 1916.

2461. *Typha angustifolia* L. 2 Clifton Hampden. Sutton Courtney.

2463. *Sparganium erectum* *var. *microcarpum*, Neum. Sandhurst, *Marshall* l.c.

2464. *S. neglectum*, Beeby. 5 Coleman's Moor, *Wallis*.

2471. *Lemna polyrhiza* L. 4 Aldermaston, *Summers*.

2476. *Alisma Plantago-aquatica* L. Var. *lanceolatum* (With.). 5 Virginia Water. *Var. *latifolium*, Kunth. 2 Radley.

2477. *Echinodorus ranunculoides*, Engelm. 4 Grazeley, 1915. 5 Hurst Green, *R. A. Pryor,* 1873, *Hb. Br. Mus.* Still there 1915.

2483. *Triglochin palustre* L. and 2485 *Potamogeton natans* L. First record, circa Oxford, *Sibth. MS.* 1780.

2486. *P. polygonifolius*, Pour. 2 Wootton Bog, *Boswell*, now lost.

2487. *P. Drucei*, Fryer, in *Brit. Pondweeds*, p. 31, t. 21, and *Journ. Bot.* 524, 1899. *Hb. Normale*, Ed. Dorfler, n. 4593, Aug. 1904. This beautiful species still abundantly grows in the Loddon. It is the *P. fluitans forma* of *Fl. Berks*, see p. 516 and corrections. In 1917 Mrs. Wedgwood found it also in the river near Bath, the second known habitat.

2502. *P. perfoliatus* L. First rec. circa Oxford, *Sibth. MS.* 1780. *Var. *ovalifolius*, M. & K. 1 Kings Weir, *Druce* in *B.E.C.* 1916.

P. lucens L. and *P. densum* L. were first recorded about Oxford, *Sibth. MS.* 1780.

2504. *P. compressum* L. 4 Kennet Canal near Hungerford, 1918, *C. P. Hurst.*

*2517. *Zannichellia gibberosa*, Reichb. First found in Berkshire by the writer at Marcham, 1891. (The *pedunculata* of the *Flora* in part).

*2528. *Cyperus fuscus* L. First found in Berkshire at 3 Suleham by *V. E. Murray* in 1911.

2529. *Eleocharis palustris*, Br., and 2531 *E. acicularis,* Br., in Roman Silchester.

2542. *Scirpus setaceus* L. 2 Boar's Hill, *Miss Claridge*, 1911. Cumnor House, *G. Parry.* 4 Coleman's Moor, *Summers.*

2532. *S. sylvaticus* L. 2 Near Clifton Lock.

2548. *Eriophorum angustifolium*, Roth. 4 Boxford. 5 Sunningwell Bog. Sexes on different plants, sexes on different spikes of same plant, sexes on same spike, *G. H. Sawyer* in *Gard. Chron.* 53, 1865.

[2554. *Schoenus nigricans* L. Refound on Bagshot Heath in Surrey by Lady Davy in 1916.]

2558. *Carex Pseudo-cyperus* L. Ditches by Thames near Reading, *Wallis.* Between Pangbourne and Suleham. 4 Wilderness, Kintbury, *Hurst.*

2559. *C. riparia*, Curt. Roman Silchester. The *hybrid with *C. vesicaria* = *C. csomadenis*, Simonk., occurs at Wytham.

2560. *C. acutiformis*, Ehrh. var. *Kochiana* (DC). 2 Cothill. **C. acutiformis* × *riparia.* 5 Coleman's Moor.

2561. *C. vesicaria* L. 1 Wytham. 5 1½ mile from Blackwater, *Marshall* l.c.

2569. *C. strigosa*, Huds. 4 Near Brocas Lane Farm, *Wallis*. 5 Bisham Wood, *Wallis*. By the river near Sandford Mill.

2570. *C. helodes*, Link. (*laevigata*). 3 Near Bradfield. 4 Greenham Common.

2576. *C. flava* L. 2 Between Abingdon and Radley.

*C. *lepidocarpa*, Tausch. First found by the author, 1894. 2 Tubney. 5 Earley teste Kükenthal. See *J. of B.* 200, 1910. Broadmoor, *Monckton*.

*2585. *C. montana* L. First found in Berkshire by Mr. J. W. Higgens in 1917. 5 Near Bracknell, *B. E. C. Rep.* 132, 1917. Here it occurs sparingly in flower but with a considerable quantity of flowerless specimens. I distributed it through the *B.E.C.*, see Report, 1918. A most interesting addition to the *Flora* which I predicted would be found.

2600. *C. elata*, All. 5 Coleman's Moor. Near Bracknell.

*C. *elata* × *Goodenowii*. Sandhurst.

2601. *C. gracilis*, Curt. (*acuta*). Var. *gracilescens*, Almq. 1 Newbridge. *Var. *fluviatilis*, Fl. Ing. Wytham. *Var. *angustifolia*, Kuk., near Iffley.

2604. *C. Goodenowii*, Gay. *Var. *strictiformis*. Sandhurst. Var. *chlorostachya*, Asch. Loddon Bridge, &c.

2608. *C. leporina* L. *Var. *argyrolochin*, Koch. Bulmershe Park, *Salmon* in *Journ. Bot.* 225, 1906.

2612. *C. canescens* L. Roman Silchester.

2614. *C. muricata* L. *Var. *fumosa*, Gren. 2 Didcot, *B.E.C.* 54, 1917.

*2615. *C. Pairaei*, F. Schultz. First found by the writer, see Rep. *B.E.C.* 1911. 2 Frilford. 3 Basildon. 5 Loddon Bridge. Finchampstead.

*2617. *C. Boenninghausiana*, Weihe. 4 Greenham Common.

*2619. *C. diandra*, Schrank. First found by L. V. Lester-Garland in 1912. 2 Frilford Bog in small quantity; a welcome addition to the Flora.

2620. *C. disticha*, Huds. 1 Very abundant at New Bridge.

2628. *C. pulicaris* L. 5 Coleman's Moor, *Summers*.

†2635. *Panicum Ischaemum*, Schreb. (*glabrum*). Reading.

†2632. *P. Crus-galli* L. Reading. 2 Abingdon.

*2633. *P. colonum* L. 3 Reading. Alien.

†2639. *Setaria viridis*, Beauv. 2 Cothill. 3 Reading, *Wallis*.

†2640. *S. glauca*, Beauv. Reading, *Wallis*.

†2641. *S. verticillata*, Beauv. Reading.

*2656. *Phalaris angusta*, Nees. 4 Reading, *Murray*. In some plenty by the border of a newly made road. Of S. American origin.

2667. *Alopecurus aequalis*, Sobol. (*fulvus*). 4 Padworth Common, *Wallis*.

2666. *A. geniculatus* L. First rec. circa Oxford, *Sibth. MS.* 1780. *Var. *natans*, Wahl. 2 Wootton.

2673. *Phleum pratense* L. First rec. circa Oxford, *Sibth. MS.* 1780. *Var. *intermedium* (Jord.). 2 Near Upton.

2684. *Agrostis alba* L. First rec. circa Oxford, *Sibth. MS.* 1780. Var. *stolonifera* L. 3 Near Reading, &c.

2687. *A. canina* L. *Var. *stolonifera*, Blytt. 5 Nr. Finchampstead.

2699. *Apera Spica-venti*, Beauv. 3 Tilehurst, *Murray.* 4 Earley Rise, *Summers.* Between Bagshot and Bracknell, *Murray.* *Sub-var. *purpurea* (Beauv.). Old Windsor.

*2700. *A. interrupta*, Reichb. 2 On a wall at Marcham, 1900. Casual.

2706. *Aira caryophyllea* L. First record, circa Oxford, *Sibth. MS.* 1780. 5 Earley.

2707. *A. praecox* L. First rec. circa Bagshot, *Sibth. MS.* 1780.

2715. *Trisetum flavescens*, Beauv. (*pratense*). First rec. circa Oxford, *Sibth. MS.* 1780. 2 Sutton Courtney.

†2719. *A. strigosa*, Schreb. 3 Moulsford Downs.

2724. *Arrhenatherum elatius*, M. & K. (*avenaceum*). First rec. circa Oxford, *Sibth. MS.* 1780. *Var. *biaristatum* (Peterm.), Druce. 1 Wytham.

2733. *Phragmites vulgaris* (Lam.) Druce (*communis*). 'This was called Daddymore at Twyford by a carter in 1880,' *Prof. York Powell.* See MS. note under Papirus 'dud hamor' in *Ælfred's Vocabulary* of the 10th century.

*Var. *effusa* (A. & G.) Druce. Cothill. 4 Kintbury, &c. The Cothill plants approach the *var. *flavescens* (Cust.) in the colour of the inflorescence.

2739. *Koeleria gracilis*, Pers. (*cristata*). 1 Newbridge

**K. britannica*, Domin. Widely distributed. First recorded by the writer. 1 Wytham. 2 Besselsleigh. Cherbury Camp. 3 Streatley. Compton. 4 Brightwaltham.

2745. *Molinia caerulea*, Moench. (*varia*). First record, circa Bagshot, *Sibth. MS.* 1780. *Var. *robusta*, Prahl, Wellington College. Windsor Park. Ascot. Hardly separable from *major*, Roth.

2746. *Catabrosa aquatica*, Beauv. First rec. circa Oxford, *Sibth. MS.* 1780. 2 Cothill. 4 Woodhay, *Summers.* Coleman's Moor, *Wallis.*

2750. *Melica uniflora*, Retz. First rec. circa Oxford, *Sibth MS.* 1780. 2 Besselsleigh. 3 Streatley, *Gambier Parry,*

2751. *Dactylis glomerata* L. First rec. circa Oxford, *Sibth. M.S.* 1780. *Var. *abbreviata*, Dreyer. 3 Basildon. 4 Hungerford.

2755. *Briza media* L. and 2759 *Poa pratensis* L. First rec. circa Oxford, *Sibth. MS.* 1780.

*2759. *P. irrigata*, Lindman. First found by the writer, 1892. 4 Near Padworth. See *Flora* p. 580, at that time the species had not been described. It is rare in lowland situations.

2761. *P. trivialis* L. First rec. circa Oxford, *Sibth. MS.* 1780. *Var. *rigidior* Fl. Ingric. 760, 1861. 4 Hungerford, *G.C.D.*

2769. *P. annua* L. First rec. circa Oxford, *Sibth. MS.* 1780.

2762. *P. nemoralis* L. 2 Besselsleigh. 3 Pangbourne, *Herb. Bab.* 1847. *Var. *firmula*, Gaud. 3 Bere.

2765. *P. compressa* L. 2 Drayton. 5 Wellington College.

2771. *Glyceria aquatica*, Wahl. (*Panicularia*). First record, circa Oxford, *Sibth. MS.* 1780.

2774. *G. distans*, Wahl. 2 Abundant on Abingdon racecourse.

2779. *Festuca rigida*, Kunth. 2 Kingston Bagpuize. 4 Brightwaltham, *Holliday*.

2781. *F. arundinacea*, Schreb. On the Kimmeridge Clay, Boar's Hill. Frilford.

2792. *F. Myuros* L. 1 Fyfield. Buckland. 2 Drayton.

2791. *F. bromoides* L. (*sciuroides*). First rec., 2 Wootton, *Holliday*, 1858. Sutton Courtney, &c.

2782. *F. elatior* × *Lolium perenne* = *F. adscendens*, Retz. = *F. loliacea*, Curt. 4 Hungerford, *Miss Todd*. *F. elatior*, first rec. circa Oxford, Sibth. MS. 1780.

*2784. *F. heterophylla*, Lam. First record, the writer. 3 About a mile and a half from Bradfield, on the Bere estate in great plenty and looking native.

2787. *F. ovina* L. *Var. *glauca* (Lam). Alien. Reading College avenue, *F. W. Stansfield*, 1909.

2796. *Bromus sterilis*, L. & B., *hordeaceus* L. First rec. circa Oxford, *Sibth. MS.* 1780.

†2806. *B. secalinus* L. 1 Cumnor. 2 Abingdon. Cothill. 4 Near Snelsmore, *Comyns*. 5 Wellington College.

2807. *B. commutatus*, Schrad. 3 Pangbourne, *Herb. Boswell Syme*. 1861. Wellington College.

2811. *B. hordeaceus* L. *Var. *leptostachys* (Pers.) 3 Basildon. Bradfield.

2812. *B. interruptus*, Druce. 5 Near Windsor, *Everett*.

*2803. *B. unioloides*, Schrad. 2 Abingdon. Cothill. 3 Reading, by the railway. Alien.

*2802. *B. inermis*, Schrad. 3 Reading, *V. Murray*. Alien.

2819. *Brachypodium pinnatum*, Beauv. 1 Abundant in a wet clayey field near Newbridge. 3 Ashampstead, *Murray*.

2824. *Lolium perenne* L. First rec. circa Oxford, *Sibth. MS.* 1780. The *hybrid with *L. multiflorum* was found at Wytham and agreed to by Dr. Domin.

†2821. *L. temulentum* L. 2 Abingdon. 3 Near Reading, *Murray*.

2849. *Hordeum murinum* L. First rec. circa Oxf. *Sibth MS.* 1780.

*2851. *H. jubatum* L. Wellington Coll. station, 1918. An American alien.

2858. *Elymus europaeus* L. 3 Ashampstead, *C. P. Hurst*.

2862. *Taxus baccata* L. A large tree 20 feet high before branching at Kingston Bagpuize.

*2863. *Pinus Pinaster*, Ait. Planted as at Frilford, &c. 3 Tilehurst.

2864. *P. sylvestris* L. 1 Buscote, Faringdon. The group of Scotch Firs near the Obelisk in Windsor Park were about 104 years old in 1864.

2866. *Equisetum maximum*, Lam. 4 Beenham, *Summers*.

2868. *E. sylvaticum* L. 4 Near Boxford.

2876. *Pteris aquilina* L. Roman Silchester. Our plant is the *var. *lanuginosa*.

2878. *Blechnum Spicant*, Roth. 4 Boxford.

2881. *Asplenium Trichomanes* L. 1 Fyfield Church. 4 Theale. Thatcham. 5 Sonning, *Wallis*.

2885. *A. Adiantum-nigrum* L. 4 Theale. 5 Arborfield Bridge. Nr. Brough Farm, *Wallis*. 5 Finchampstead, *Mrs. Cope*.

2886. *A. Ruta-muraria* L. 2 Kingston Bagpuize. 3 Ilsley. 4 Welford. 5 Finchampstead, *Mrs. Cope*.

2879. *Phyllitis Scolopendrium*, Greene. 2 Letcombe. 3 Tilehurst, *Higgens*. 4 Wire Mill, Kennet, *Stansfield*. Welford. 5 Finchampstead, *Cope*. Bray, *Riddelsdell*. Windsor Castle.

2903. *Dryopteris Thelypteris*, A. Gray, the *P. Dryopteris* of *Monckton's List*. ? Does it really occur in Berks in that area.

2899. *D. aristata*, Druce (*dilatata*). 3 Churn. Sulehan. 5 Easthampstead.

*2893. *Polystichum aculeatum* × *setiferum* (*angulare*). 4 Kintbury.

2907. *Polypodium vulgare* L. A bifurcate form. '*P. bifurcata pinnulis serratis* on ye walls of Windsor Castle,' *Adam Buddle* in *H. B.M.*, circa 1700.

2911. *Ceterach officinarum*, Willd. [3 Goring, *Gambier Parry*.] Basildon, plentiful. 4 Hampstead, *Comyns*. 5 Finchampstead, *Mrs. Cope*.

2918. *Osmunda regalis* L. 4 Near Welford.

2920. *Ophioglossum vulgatum* L. 5 Near Earley, *Wallis*. Sonning, *Miss Ridley*.

*2923. *Azolla filiculoides*, Willd. 3 Sulcham, 1912, *Murray*. Pangbourn, *Higgens*. Tidmarsh. Of American origin.

2950. *Chara contraria*, Br. 1 Pond in Wytham Wood. Border of Thames near Oxford.

1919

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THE BOTANICAL SOCIETY AND EXCHANGE CLUB OF THE BRITISH ISLES.

REPORT FOR 1918

OF THE

BOTANICAL EXCHANGE CLUB

(CONVENIENTLY ABBREVIATED REP. B.E.C.)

BY THE

EDITOR AND DISTRIBUTOR,
W. C. BARTON, B.A., F.L.S.

VOL. V. PART IV.

PUBLISHED BY
T. BUNCLE & CO., MARKET PLACE, ARBROATH.
October 1919.

PRICE 3s 6d.

REPORT OF THE DISTRIBUTOR FOR 1918.

The number of sheets sent in by 33 contributors was 5340, covering 53 gatherings. There was perhaps less of critical interest than in recent years, doubtless owing to the stringent conditions of the fifth year of war, and some of the more critical genera were almost or entirely unrepresented.

The Editor regrets that he has not been able to secure unanimity in all cases in spite of the kindness of those who examined again the disputed specimens and reconsidered their determinations. Some of the sheets sent in were inadequate and not well selected ; in the case of critical plants such as *Euphrasia* it is important that each sheet should be representative of the whole gathering. At least 12 sheets should be sent, more if possible; small contributions are entirely absorbed by the referees and comments in the *Report* are of little use to members who have not seen the plant under discussion. No mention is made in the *Report* of cultivated plants or plants recently distributed from the same locality, nor of those of which less than 6 sheets were received.

The best thanks of the Club are due to Messrs W. Barclay, A. Bennett, C. E. Britton, C. Bucknall, Dr E. Drabble, Dr G. C. Druce, Mrs Gregory, Mr J. Groves, Prof. A. Henry, Messrs A.B. Jackson, D. Lumb, Rev. E. S. Marshall, Mr W. H. Pearsall, Mr H. W. Pugsley, Rev. H. J. Riddelsdell, Messrs C. E. Salmon, J. A. Wheldon, Lt.-Col. Wolley-Dod ; and to the other members whose notes appear in the following pages. The Editor also wishes to express his appreciation of help readily given by Messrs E. G. Baker and A. J. Wilmott of the British Museum, and by Dr Stapf and his assistants at Kew.

W. C. Barton,
Editor of *Report* and Distributor for 1918.

43 Rosary Gardens,
London, S.W.7.

LIST OF PARCELS RECEIVED.

	No. of Plants.	No. of Sheets.
Bailey, C.,	3	61
Barclay, W.,	2	31
Barton, W. C.,	64	675
Bickham, S. H.,	5	118
Britton, C. E.,	11	173
Brown, G. C.,	3	40
Burdon, Rev, Preb. R. J.,	9	112
Cryer, J.,	22	365
Cumming, L.,	8	78
Druce, G. C.,	54	598
Fox, Rev. Preb., H. E.,	22	54
Hall, P. M.,	23	37
Jackson, A. B.,	16	85
Little, J. E.,	10	135
Lumb, D.,	3	84
Marquand, C. V. B.,	28	505
Marshall, Rev. E. S.,	11	138
Melvill, J. C.,	4	58
Pearsall, W. H.,	8	191
Riddelsdell, Rev. H. J.,	15	317
Rilstone, F.,	5	86
Robinson, F.,	40	421
Roper, Miss I. M.,	15	228
Salmon, C. E.,	5	40
Stephenson, Rev. T.,	1	17
Travis, W. G,	9	81
Vigurs, C. C.,	3	50
Waddell, Rev. C. H.,	10	65
Wade, A. E.,	6	105
Webster, A.,	8	66
Wheldon, J. A.,	6	36
White, J. W.,	22	253
Wilson, A.,	2	37
Total,	453	5340

Thalictrum —— ? (*T. flexuosum* Reichb., J. G. Baker in *Fl. N. orks.*). Below Wynch Bridge, Teesdale, Durham, v.-c. 66, July , 1914.—P. M. Hall. "Neither anthers nor fruit; as it stands I an only say *T. minus* L., agg."—Druce.

Ranunculus Flammula L., forma ? [336]. Damp ground near ort le Marchant, Lancresse Common, Guernsey, August 8. 1912. he leaves in this plant are lanceolate rather than linear and differ n this respect from Mr Hurst's Savernake Forest specimens sent o the Club in 1913 per Mr Druce. The stem is arcuate, rooting t the nodes, so that it does not fit any of Wallroth's varieties. I uppose it is one of the many forms which Dr Glück considers due to ituation.—W. C. Barton. "As Mr Barton says the leaves are roader than the true *tenuifolius* Wallr., but not so much as to xclude it from being put under that creeping state of *Flammula.*"—ruce. "A peculiar state, due to situation, I believe. It may ome under Syme's *pseudo-reptans*, but is broader-leaved than var. *adicans* Nolte of northern lake-sides; and some of the specimens are emarkably tufted."—Marshall.

R. trilobus Desf. [335]. Fowl run, Mildenhall, Suffolk W., .-c. 26, June 6, 1913. Named at Kew.—W. C. Barton. "Yes; ut more slender and branched than in my Tweedside specimens. It s treated in *Fl. Fr.* as a subspecies of *sardous.*"—Druce.

R. sphaerospermus Boiss. & Blanche. Runcton stream, Sussex V., v.-c. 13, May 20, 1918.—R. J. Burdon. "Quite agrees with pecimens from Gloster thus named for me by Mr Groves."—iddelsdell.

Aconitum Napellus L. Streamside in the South Hams, Devon ., v.-c. 3, June 1918.—C. V. B. Marquand. "In native localities. .*g.*, by the rivers Ely and Rumney in Glamorgan and Monmouth, his species seeds and multiplies with great freedom: this I have not bserved to be the case with mere garden outcasts, though perhaps n such cases disturbance of the surroundings would prevent their preading."—Riddelsdell. "*A. Napellus* L., var. *laciniosum* eringe Mus. Helv. i., 159, 1823. 'Floribus laxe spicatis panicuatisque coeruleis amplis subconicis, laciniis foliorum profundis inearibus acutis. Cette variété se distingue de toutes les autres par n casque très bombé, embrassant les sépales latéraux et se proongeant insensiblement en un bec aigu. Les feuilles ont leurs obules très longs-linéaires et terminés insensiblement en pointe.' his plant has been known in England some hundreds of years and s not known wild elsewhere. Seringe's solitary specimen at Kew, hough incomplete, is sufficient to establish the identity. It is not nown whence he got the specimen he described, though it is possible it came from this country. It is sufficiently distinct from the Scandinavian plant and from the common Swiss plant, var. *compactum* Reichb., by its early flowering, thin texture of leaves and lighter-coloured flowers in addition to the characters stated by Seringe. Even on a conservative standard it would seem to be a good variety and should replace the Linnean plant in our British lists. I am indebted to Dr Stapf for help in the preparation of this note."—BARTON.

Papaver Rhoeas L., var *maculatum*. Burpham, Sussex W., v.-c. 13, July 1918.—G. C. DRUCE.

P. Rhoeas L., var. *caudatifolium* (Timb.). [6901]. Burpham, Sussex W., v.-c. 13, July 1918.—G. C. DRUCE. "Unfortunately my example is only in bud, so the important capsule character (ex R. & F. *Fl. Fr.*) 'largement ovale, rarement subglobuleuse, toujours atténuée à la base" cannot be noted. I presume Mr Druce satisfied himself as to this, as leaf-cutting in *P. Rhoeas* type seems to wander in all directions."—SALMON.

Argemone mexicana L. Waste ground, Bradford, v.-c. 64, August 12, 1918. This is the Devil's Fig—Fico del Inferno—of the Spaniards; the Yellow Thistle of the West Indies; and the Cardo Santo of Brazil.—J. CRYER. "The flowers in my specimens appear whitish. If so when fresh, it is the var. *ochroleuca* Sweet, which also appeared on Tweedside."—DRUCE. "All had cream-coloured petals."—CRYER.

Barbarea vulgaris (R. Br. in) Ait., var. *arcuata* Fr., subvar. *brachycarpa* A. B. Jackson (det. A. B. J.). Wymondley Road, Hitchin, Herts. v.-c. 20, August 19, 1918. All sheets from one plant, the same from which I distributed the plant to the Watson Club in 1917. The plant looks likely to live another year, as it has put out fresh radical leaves.—J. E. LITTLE. See *Journal of Botany* 207, 1916.

B. vulgaris (R. Br. in) Ait., var. *silvestris* Fr. Purwell field, Hitchin, Herts. v.-c. 20, June 24, 1918. Mr A. B. Jackson confirms the name.—J. E. LITTLE.

B. intermedia Bor., var. *fallax* Lor. & Barr. [1995]. Oat field, Lower Morden, Surrey, v.-c. 17, July 2, 1918. Well marked by the widely spreading or divaricate pods.—C. E. BRITTON. "Distinguished from the type by the spreading silicles as defined by the authors in *Fl. Montp.* i., 42."—DRUCE. "I believe the characters of this variety are even less stable than those of the varieties of *B. vulgaris*; it is not unusual to find pods widely spreading and ± erect on the same plant."—JACKSON.

Arabis hirsuta Scop., var *glabrata* Syme. Friday Church, Burpham, Sussex W., v.-c. 13, May 16 and June 11, 1918.—R. J. BURDON. "The gathering included some normally hairy examples of type; these were removed and the remainder distributed in pairs as described by Mr Riddelsdell below."—BARTON. "One of my two specimens is glabrous save for a few hairs at the base of the stem; the other is thinly hairy the whole length of the stem. Leaves glabrous. This does not quite answer to book descriptions, but it is near enough to be put under the variety."—RIDDELSDELL. "I am glad to see this interesting plant from a fresh Sussex station and one considerably further west than those previously reported. As noted in *Watson B.E.C. Report* 51, 1917-18, I then felt inclined to include hairy-stemmed plants under var. *glabrata*, and with these specimens before me the inclination is strengthened rather than weakened."—SALMON.

Cardamine pratensis L., var. *palustris* (Peterm.), forma *alba*. Loddon Bridge, Berks., v.-c. 22, June 1918. Plants with nearly pure white flowers occurred with the ordinary lilac-coloured form near Loddon Bridge, where Mr Higgins thought he found a hybrid of *C. pratensis* with *C. flexuosa*.—G. C. DRUCE.

C. flexuosa With. Ditch near Brandon Station, Warwick, v.-c. 32, June 3, 1918. This is probably frequently overlooked, but no record of it has been made in the neighbourhood for many years.—L. CUMMING.

C. flexuosa With., var. *umbrosa* G. & G. Banks of the Rea brook, a tributary of the Severn, Shrewsbury, Salop, v.-c. 40, May 1918. As considerable difference of opinion on the part of experts seemed to exist with regard to my last sending of this plant to the Club, I again forward some luxuriant examples. It grows in rich alluvial soil often overflowed in winter. *C. hirsuta* L., typical, occurs at a higher elevation, but no intermediates.—J. C. MELVILL. "Yes, the var. *umbrosa* (Gren. & Godr. Fl. Fr. i., 110, as var. of *sylvatica*). Druce Fl. Berks. 50, 1897."—DRUCE. "My plants seem to possess the broader, angular or cut segments of the upper leaves described by Grenier and Godron for their *umbrosa*, but is not that perhaps a luxuriant shade-grown state of the type?"—SALMON. "A shade form, not uncommon in such situations; I do not see any good varietal character."—MARSHALL.

Erophila verna Meyer. Garden path and at foot of a wall, Wigginton, Oxon, v.-c. 23, April and May 1918. I think it is *majuscula*.—H. J. RIDDELSDELL. "The larger plant has the habit of *E. majuscula* Jord., but is distinguished by the shape of the silicle which is almost that of *E. praecox* DC., but attenuated at the base. It is nearest to *E. decipiens* Jord."—BRITTON.

E. virescens Jord. [4466]. Near High Force, Teesdale, Durham, v.-c. 66, April 18, 1918. Frequent near High Force, from 900 to 1600 ft. or more. The only segregate observed. Also [4467] a more hairy state, unmortared wall near the High Force Hotel, above 1000 feet, April 27, 1918. An unusually hairy state, with paler, less fleshy leaves, and often remarkably large; these modifications are clearly due to situation.—E. S. MARSHALL.

E. furcipila Jord. Among short grass, sandy seashore, Bardsea, Lancs. N., v.c. 69b, April 14, 1918.—W. H. PEARSALL. Mr Pearsall writes later: " I have just discovered that I put wrong labels to my *Erophila*; the ? *furcipila* was insufficient for distribution. My notes on the one sent in are—' small dwarf form with broadly elliptical pods, all hairs simple. Expanded flowers 3 mm., white. All leaves green, a few tips red. Pedicels usually solitary or two, rarely three. Lower pedicels longer than silicle, often twice as long, but these measurements are from young plants.' ? *E. minuscula* Sudre." " This seems to agree fairly well with *E. lepida* Jordan (= *E. praecox* Stev., var. *lepida* Rouy) as the flowers are about ½ mm. longer than in *E. brachycarpa* Jord. The silicles are too small for any form of the stirps *leptophylla* under which Rouy places *E. furcipila*. The largest in Mr Pearsall's gathering measures 4 × 2.5 mm.; in *E. furcipila* they should be 5.5-6.5 × 2 mm., and so giving a much narrower outline to the silicle. The hairs are bifid with a fair number of simple ones intermixed, in fact some leaves have a preponderance of simple ones. It is thus somewhat intermediate between Jordan's group of *glabrescens* and *brachycarpa*, but Rouy is no doubt quite right in placing it under *E. praecox* Stev."—WHELDON. " This has elliptical silicules 3½ × 2½ mm. The majority of the hairs are simple, the bifid hairs being less numerous. It comes under *E. praecox* DC."—BRITTON. See *Report* 88-99, 1914.

Cochlearia danica L. Hilbre Island, Cheshire, v.-c. 58, June 22, 1918.—W. G. TRAVIS. " Yes."—Druce.

Sisymbrium orientale L., var. St Philip's Marsh, Bristol, June 1918.—G. C. DRUCE.

S. officinale Scop., var. *leiocarpum* DC. [14]. Waste ground, Leicester, v.-c. 55, August 1918.—A. E. WADE. " Yes; often of adventitious origin."—DRUCE.

Camelina sativa Crantz. On a dust heap at Eastville, Bristol, Gloster W., v.-c. 34, September 20, 1918.—J. W. WHITE. " This must be very near *C. macrocarpa* Wierzb. (= *C. sativa*, var *integrifolia* Rouy). The silicles reach 7 mm. in length and the leaves are entire."—WHELDON. Dr Thellung names it simply *C. sativa*.

Brassica arvensis O. Kuntze, var. *orientalis*. In cornfields near Swalcliffe Grange, Oxon, v.-c. 23, June 9, 1918. As common there is the type. H. J. Riddelsdell. "Yes; *B. arvensis*, Scheele, var. *orientalis* (L.) Druce Br. Pl. List. See *Fl. Berks.*, 60. It differs from type by the silicles being covered with bristly hairs."—Druce. "In my specimen the pods are rather immature, but from the slender siliques becoming torulose, with long style, and covered with deflexed hairs, I believe the plant is *Sinapsis Schkuhriana* Reichb."—Travis. "In R. & F. *Fl. Fr.* var. *Schkuhriana* (Reichb.) is placed under *Sinapsis arvensis* as a distinct variety from *orientalis*; but those authors make no mention of the hairy pods."—Druce.

Capsella Bursa-pastoris Medic, var. *densifolia* Mott. [1924]. Merton parish, Surrey, v.-c. 17, June 9, 1918. Typical examples of this variety.—C. E. Britton.

C. Bursa-pastoris Medic, var. [1965]. New Malden, Surrey, v.-c. 17, June 15, 1918. This is a well marked variety, nearer related to var. *densifolia* Mott than to any other form, but well distinguished by its more vigorous habit, its long leaves sinuately pinnatipartite with lobes more distant, entire, and of a bright green, not grey-green as in *densifolia*. The capsules are large, less triangular and more cordate-prolonged than those of *densifolia*. The distinctive features of this form seem quite to warrant ranking it on an equality with the varieties of Mott.—C. E. Britton.

C. Bursa-pastoris Medic, var. [1591]. Merton parish, Surrey, v.-c. 17, June 11, 1916. This is a form difficult to place, and not to be referred to any of Mott's varieties. From [1965] it differs chiefly in the narrower toothed lobes of the leaves with smaller terminal segment and deeper notched capsules tapering more rapidly to the base. It is another form requiring segregation.—C. E. Britton. "Similar to the 1916 Wigginton plant, I think: var. *macrocarpa* Hobkirk."—Pearsall.

C. Bursa-pastoris Medic, var. [1947]. Merton parish, Surrey, v.-c. 17, June 5, 1918. In the form of the capsule this is related to var. *macrophylla* Mott, but is well marked by its uniformly pinnatipartite leaves and cannot be referred to that. It is evidently a member of a group of forms exemplified by my [1591] and [1965].—C. E. Britton.

C. Bursa-pastoris Medic, var. *macrophylla* Mott. [1963]. Hort. West Barnes, Merton, Surrey, v.-c. 17, 1918. In this set of plants some are quite typical of Mott's variety with the radical leaves entire or toothed: some of the larger plants however exhibit pinnatifid leaves.—C. E. Britton.

C. Bursa-pastoris Medic, var. [1994]. Hort. West Barnes, Merton, Surrey, v.-c. 17, July 3, 1918. Grown from seed of the *Capsella* contributed by Mr Robinson to the 1917 distribution. It is very interesting to observe that this form preserves all the distinguishing features of the parent plant, though grown in a very different soil, *i.e.*, London Clay, and in a season of drought. Members who possess Mr Robinson's plant may be glad to have this cultivated plant for comparison. Further study of this *Capsella* has convinced me that it possesses such distinct features of its own that it cannot be referred to Mott's *stenocarpa-lyrata*, though evidently related to that variety. If it has not already received a distinctive name, it is a form well worthy of recognition.—C. E. BRITTON. "Var. *stenocarpa-lyrata* Mott."—PEARSALL. See *Report* 210, 1917.

C. Bursa-pastoris Medic, var. *brachycarpa* Mott. [1914]. New Malden, Surrey, v.-c. 17, May 4, 1918. A well-marked early flowering form.—C. E. BRITTON. "Agrees with Mott's description and figure in *Fl. Leics.*"—SALMON. "Yes; with a few capsules having margins slightly concave."—PEARSALL.

C. Bursa-pastoris Medic, var. *stenocarpa-lyrata* Mott. Roadside, Stainton, Lancs. N., v.-c. 69b, September 7, 1918.—W. H. PEARSALL. "I agree. Unfortunately gathered too late to show the characteristic form of the root leaves."—BRITTON.

C. Bursa-pastoris Medic, var. *rubellaeformis*. [15]. Cultivated ground, Leicester, v.-c. 55, August 1918.—A. E. WADE. "If this is compared with the description of var. *rubellaeformis* Mott it will be seen it can scarcely be placed to that form, which it recalls only in the shape of the immature capsules. This certainly exhibits 'lateral margins concave, giving to the lobes a slightly recurved appearance.' but as the capsule becomes mature the lateral margins become more or less straight or even slightly convex. Except that the leaves are smaller, this plant approximates to var. *macrophylla* in the character of the root leaves, but I do not think it can be placed to any of Mott's varieties, as it really occupies a position between vars. *macrophylla* and *bifida*. It is worthy of cultivation and perhaps ultimate segregation."—BRITTON. "My plants are rather young, but I should prefer to call them small forms of *bifida*."—PEARSALL.

Bursa pastoris Weber, var. Furness Abbey, v.-c. 69b, October 24, 1918. This has dried much more like var. *stenocarpa-coronopifolia* than it appeared fresh. The notch was exceedingly deep. I see that Mr Britton considers the depth of notch a trivial character. Mott's figure of *stenocarpa* shows a deeper notch than any occurring in plants I have received from the Club. Incidentally I may mention that plants which could be labelled *gracilis* occur in small numbers

mong *brachycarpa*, *bifida*, *stenocarpa* and *macrocarpa*. Surely
Ir Britton is right in his opinion that they are not a separate variety.
ar. *bifida* practically monopolises gardens here.—D. LUMB. " An
nteresting form, deserving of culture and careful study. It cer-
ainly is related to var. *stenocarpa-coronopifolia* rather than to any
ther of Mott's varieties and can without undue straining be so
alled, but it is closer related to the elementary species studied by
hull and called by him *B. Bursa-pastoris rhomboidea*. Note the
homboid termination of the lateral segments of the leaves. Almquist
as established 70 or 80 elementary species founded upon the varia-
ions of *Capsella Bursa-pastoris*, and it is evident that we shall not
ake much progress in the knowledge of the British forms until our
lants are correlated with those described by the Swedish botanist."
—BRITTON. " Var. *stenocarpa-coronopifolia* Mott."—PEARSALL.

B. pastoris Weber, var. Abbey Road, Barrow-in-Furness, v.-c.
9b, October 26, 1918. This is a roadside plant, and I fancy it is a
lender form of *bifida* Mott, but I can't profess to know these varieties
ell.—D. LUMB. " The distinguishing feature of this form is the
vanescent character of the rosette of radical leaves (if indeed a rosette
s formed). It is related to var. *brachycarpa* of which it has the
abit, but in shape the capsule is intermediate between that and var.
ensifolia."—BRITTON.

Lepidium latifolium L. Paradis, Guernsey, July 1915.—C. V.
B. MARQUAND.

L. Draba L. On rubbish, St Philip's, Bristol, August 14, 1890.
—J. W. WHITE. " This comes under my forma *viridescens*, the
airs being scattered and short so that the plant appears glabrescent."
—DRUCE.

Thlaspi alpestre L., var. *occitanum* (Jord.). On lead mine
efuse, Kirby, Malham Moor, Yorks. W., v.-c. 64, June 5, 1918.—W.
G. TRAVIS. " Yes: but it should be spelled *occitanicum*. Babington
s responsible for the misspelling."—DRUCE.

Rapistrum rugosum Berg. Near North Stoke, Sussex W., v.-c.
3, June 6 and 17, 1918.—R. J. BURDON. " This *R. rugosum* All.,
erging towards *Linnaeanum*. Prebendary Burdon showed me grow-
ng in immense quantity on a grassy hill slope quite naturalised."—
DRUCE.

Raphanus maritimus Sm., subvar. *albida*. Shore at Portslade,
Sussex W., v.-c. 13, September 23, 1918.—A. WEBSTER.

Viola Riviniana Reichb., forma. [373]. Wood, Dalton, Camb.,
v.-c. 29, April 27, 1918. The spur of var. *nemorosa*; flower colour

intermediate between *sylvestris* and *Riviniana*. I have never seen a plant with flowers quite this colour.—Coll. Miss WELLSMAN; comm. F. ROBINSON. "Vigorous var. *diversa*."—GREGORY.

V. canina L., var. *pusilla* Bab. Hayling Island in pure sand, Hants. S., v.-c. 11, June 1914. Cf. illustration *British Violets*, 78. Very floriferous; spur bright greenish yellow.—P. M. HALL. Also from Dawlish Warren, Devon S., v.-c. 3, April 20, 1914.—W. C. BARTON. "Yes."—GREGORY.

V. hirta × *odorata*. [1265]. Hedgebank above Wrington, Somerset N., v.-c. 6, March 20 and June 7, 1918.—IDA M. ROPER. "Near *V. hirta* × *odorata* (× *sepincola*). Stolons not typical. Miss Roper's specimens, taken at two stages of their life-history, are a pleasure to study. The colour of the flower is an interesting addition, but the paper or ribbon, owing to a tendency to fade, should be enclosed in a little paper pocket which can be gummed to the sheet."—GREGORY.

V. hirta L., var. [218]. Open ground near copse on chalk down, Ashmansworth, Hants N., v.-c. 12, April 25, 1916.—W. C. BARTON. "This plant compares well with *V. hirta* < × *odorata* (× *collina* = *V. collina* Besser) in its early stage. It would be interesting to see it in a later stage when the leaves would be more distinctive."—GREGORY.

V. variata Jord., var. *sulfurea* Drabble. [R. 2042]. Albury, Herts, v.-c. 20, June 1900. Seen by Dr Drabble.—G. C. DRUCE.

Dianthus deltoides L. [400]. Heath land, Beechamwell, Norfolk W., v.-c. 28, July 20, 1918. Continues flowering until October. —F. ROBINSON.

Saponaria officinalis L. On the banks of the Dart in a wild part of the Dartington estate, Devon S., v.-c. 3, August 14, 1918. Having the appearance of a true native.—C. V. B. MARQUAND.

Silene nutans L. Cliffs near Dover, Kent E., v.-c. 15, July 1918. Is this the *S. paradoxa* Sm. described in Bab. *Man.* ed. 9 as having "root-leaves roundly spathulate mucronate with long hafts" from Dover Cliffs?—C. C. VIGURS. "This has nothing in common with *S. paradoxa* L. which has a much more cylindrical calyx, longer carpophore, &c. Smith's *paradoxa* seems scarcely worth keeping up as a variety; it was found by Newton in Ray's time (*Hist.* ii., 995. 1688; *Syn.* 340, 1690), and seems to have been merely a taller state with somewhat broader leaves and the whole plant less viscid. Newton

Ray *Syn.* ed. 2, 201, 1696) stated that his plant (from Dover) was different to that from Nottingham Castle, but Ray (*l.c.*) suspected them to be identical as is now generally admitted. Smith's views in 1824 (*Eng. Fl.* 297) are in accordance with those of Ray and he remarks: ' Miller mistook *S. paradoxa* for the Dover Catchfly and sent it as such to Linnaeus; but I cannot learn that this grows at Dover.' "—Salmon.

Cucubalus baccifer L. [377]. Open wood, Merton, Norfolk W., v.-c. 28, August 16, 1918. This plant has a more extended area than at first thought, and is very plentiful this year in this its only native station.—F. Robinson.

Cerastium arvense L., var. *latifolium* Fenzl. [386]. Hedgebanks and edge of cultivated land, Rocklands, Norfolk W., v.-c. 28, May 31, 1918. See *Report* 128, 1914. I send a few more specimens of this extraordinary plant which is still abundant.—F. Robinson. " In addition to the large size and broad leaves the attenuated sepals are a marked feature. I should have inserted it as a variety in the *Camb. Brit. Fl.* had I then known of it."—Druce.

C. arvense L. Railway Bank, Mildenhall, Suffolk W., v.-c. 26, June 9, 1916. Sent for comparison with those contributed by Mr Robinson and Mr Cumming. The largest plants grew to a height of 18 inches, not drawn up.—W. C. Barton. " Is var. *angustifolium* Fenzl. (= *typicum* Beck.)."—Wheldon. Also Hort. Kilsby, June 17, 1918; origin, stubble field on Edge Hill, Warwick, v.-c. 38. I suppose this is correctly named, but it is very different in habit from the plant with tufted rigid stems I have seen elsewhere.—L. Cumming. " The latter I call *arvense* L."—Druce.

C. vulgatum L., var. [R. 7195]. Near Cabrach, Aberdeen N., v.-c. 93, August 1918. This glabrescent small-leaved form occurred plentifully on a serpentine hill near Cabrach, but in Aberdeenshire, where Mrs Wedgwood found it many years ago. It approaches *holosteoides* but its pubescence is not strictly confined to a line on the stem; moreover that is usually a large coarse plant growing under tidal influences. I am inclined to call this forma *lucens* of the type; it is not the var. *serpentini* Syme which has flowers as large as those of *Stellaria holostea*.—G. C. Druce. " As this plant is more glabrous than usual and has its stem-hairs in some cases arranged in lines, it makes an approach towards *holosteoides* Fr. (which does occur in Aberdeenshire), but cannot be placed I believe under that."—Salmon.

C. viscosum L., subvar. *elongatum* Rouy & Fouc. [347]. Roadside, Lodsworth, Sussex W., v.-c. 13, August 22, 1918. I understand Mr Salmon is keeping this plant under observation. So far I have seen no petals. The present gathering shows the characteristic feature equally marked in young and old plants and in large and small (1 in. quite simple to 12 in. much branched).—W. C. BARTON. "These plants are not very robust nor very much branched; they are very near my *gracile* Camb. Brit. Fl. ined. I have the closely allied *elongatum* from Skye, Oxon, Bucks, &c."—DRUCE.

Stellaria glauca With. North Stoke, Sussex W., v.-c. 13, June 25, 1918.—R. J. BURDON.

Arenaria serpyllifolia L., var. ? Walls of the sea, Ballywater, Co. Down, May 1918.—C. H. WADDELL. "I think this small fairly common wall-top plant is a state of *a. scabra* Fenzl, which is I believe the most common segregate of *serpyllifolia* in Britain. One or two of Mr Waddell's smaller plants somewhat mimic *Lloydii*, but that has different shaped capsules, more compact heads, different sepals, &c." —SALMON. "Comparing material in *Herb. Brit. Mus.* I came independently to the same conclusion as Mr Salmon."—BARTON.

A. tenuifolia L. Amberley Mount, Sussex W., v.-c. 13, June 27, 1917. A scarce Sussex plant but probably overlooked on the Downs where it delights in the bare trodden paths and cart-ruts and is soon scorched and brown in the sun.—C. E. SALMON. "Yes; not given in *Top. Bot.* for Sussex W., but long ago found by Bree on Goodwood Park wall, and I saw it at Amberley many years ago."—DRUCE. "Yes; eglandular and nearly or quite glabrous."—RIDDELSDELL. Also [1954] Fallow field on the North Downs above Ashtead, Surrey, v.-c. 17, June 9, 1918.—C. E. BRITTON.

Sagina apetala Ard. Wall in shade, Mountstewart, Co. Down, September 18, 1918.—C. H. WADDELL. "*S. apetala*, var. *barbata* Fenzl, an eglandular state."—WHELDON. "An unusually glabrous form of *S. apetala* Ard., var. *imberbis* Fenzl. Cf. *Report* 561, 1916." PEARSALL. "I think this comes under *S. apetala*, var *imberbis*."—SALMON. "A common form of slender-sepalled *apetala*."—LUMB.

S. apetala Ard. Garden, Wigginton, Oxon. v.-c. 23, June 12. 1918. The notes in the 1917 *Report* indicate a considerable obscurity in this plant, or else a widespread misunderstanding of *Sagina* forms. On the whole I am inclined to put this to *S. apetala*.—H. J. RIDDELSDELL. "Small compact densely glandular plants, with broad, fairly uniform, obtuse and spreading sepals; *S. apetala* Ard., var. *barbata* Fenzl."—PEARSALL. "I agree with Mr Pearsall."—BARTON. "I think this is rather down-trodden *S. apetala*, var. *barbata*, but it scarcely looks prostrate enough for var. *prostrata*. The flowers are too large, peduncles too long, &c., for *S. Reuteri* of which it has somewhat the habit."—SALMON. "Is *apetala*."—LUMB.

Sagina —— ? [355]. Stubble field, Kelsham Farm, near Petorth, Sussex W., v.-c. 13, September 2, 1918. With *Myosurus inimus.* I think this must go to *apetala* as the sepals, though ather long, are not sufficiently acute for *ciliata*. The spreading of e sepals in a Maltese cross is not I think a sufficiently constant aracter to determine the species.—W. C. Barton. "Stem, edicels and sepals more or less glandular. The sepals are all fairly ng but sub-obtuse, not acute enough for *ciliata*. The habit and alance of evidence point to *S. apetala*, var. *barbata* Fenzl."—Pearall. "*S. apetala*, var. *barbata* Fenzl."—Wheldon. "This lant seems to agree satisfactorily with Boreau's description of ordan's *S. filicaulis*, and with an example of Boreau's that I have xamined. This specimen leads me to think that the latter's *S. licaulis* (I have not seen Jordan's) holds a position midway between *petala* and *ciliata*; for one thing, the sepals seemed certainly in me cases inclined to expand in ripe fruit. This is so in speciiens I gathered with Mr Barton in the same station a few days arlier, but they are closely and uniformly appressed to the capsule plants I should also name *filicaulis* gathered near Hydon Ball, urrey, in August 1917. It is interesting to note that Corbière laces *filicaulis* as a segregate of *ciliata*, whilst Lloyd distinctly states hat it is 'une variation grêle' (perhaps in two senses of the word!) f *S. apetala*."—Salmon.

Sagina —— ? North Gate, Chichester, Sussex W., v.-c. 13, ctober 6, 1918. The sepals are all obtuse and I suppose the plant omes under *S. apetala* Ard., as a weak form with glandular eduncles. The sepals appear in most cases to remain appressed to he capsule.—J. E. Little. "Resembles *S. ciliata* in habit, but epals too short, uniform and obtuse for that species. I attach no mportance to the absence of spreading sepals and should call this eak *S. apetala*."—Pearsall. "*S. apetala*."—Riddelsdell. "I hould like to see more of this interesting strictly-erect plant. I elieve it to be a form of *S. apetala*."—Salmon.

Sagina maritima Don. Hilbre Island, Cheshire, v.-c. 58, June 2, 1918.—W. G. Travis. "Yes; what I consider to be the type." —Wheldon. "Rightly named, but very different to our [58] of ast year."—Pearsall. "Best left under type probably, but its ax straggling habit approaches var. *debilis* Jord."—Salmon.

Spergularia salina Presl, var. *neglecta* (Kindb.). [4116]. On ravel paths, Goodwood, Sussex W., v.-c. 13, July 1918. In pre-war imes of course the paths were clean, but now the *Spergularia* covered hem as with turf. Whether the seeds had originally blown here from he coast or been introduced with shingle is uncertain.—G. C.

Druce. "Answers to the description given by Syme (*E.B.* ed. iii.) of his *S. neglecta*, var. α. *genuina*."—Salmon. "Kindberg in the 1863 edition of his monograph describes *Lepigonum salinum* (Presl), and gives as synonyms *Spergularia salina* Presl, *Lepigonum neglectum* Kindb., *Lepigonum salinum* Fries, *Lepigonum medium* Garcke. He adds that Presl in describing *Spergularia salina* 'expressis verbis adnotat "semina tuberculata esse."' Syme evidently used the 1856 edition and overlooked the fact that Kindberg himself in 1863 admitted that his nova species (*i.e. Lepigonum neglectum*) of the 1856 ed. was identical with Presl's *S. salina*. Our books are therefore wrong in distinguishing var. *neglecta* (Kindb.) from type *salina* Presl. Nor can Hooker's (*Stud. Fl.*) '*Lepigonum neglectum* Kindb. glandular above' or Babington's (*Man.*) '*Lepigonum neglectum* (Kindb.) is glandular' stand, since Kindberg in 1863 ed. writes of *Lepigonum salinum* (Presl) = *L. neglectum* Kindb. 'caules humiles saepissime ramosissimi valde divaricati prostrati rarius simplices erecti compressi *glabrescentes vel superne glanduloso-pubescentes*.' Continental books make no such mistake."—Barton.

Claytonia sibirica L. Nursery ground, Ledbury, Hereford, v.-c. 36, September 14, 1918.—S. H. Bickham. Also from waste ground, Bradford, v.-c. 64, in abundance, June 28, 1918.—J. Cryer.

Elatine hexandra DC. Not submerged as usual. Growing luxuriantly at the NW. border of Bomere Port, near Shrewsbury, Salop, v.-c. 40, August 1918.—J. C. Melvill. "Not *Elatine*; the fruit shows this gathering to be *Montia fontana* L. (= *M. lamprosperma* Cham.)."—Barton. "My specimens are *Montia fontana* L., var. *lamprosperma* Cham."—Salmon.

E. Hydropiper L. In small quantity in Llyn Coron, Anglesey, v.-c. 52, where it has not been recently observed. July 1918.—G. C. Druce.

Hypericum quadrangulum L. (*H. maculatum* Crantz, *H. dubium* Leers.), var. *punctatum* (Schinz). By the Teith, Callander, Perth W., v.-c. 87, August 1918. Dr Schinz puts this as var. *punctatum* of subsp. *erosum*.—G. C. Druce. "Yes; as is usually the case with this variety in my experience, the dots 'peter out' as the lower leaves are reached. I think Schinz's variety equals the var. *perfoliatum* Tourlet."—Salmon.

Linum perenne L. [408]. Hedgebank, Moulton, Cambridge, v.-c. 29, August 3, 1918. Flowers the size and colour of *perenne* or between that and *angustifolium*: apparently annual.—Coll. Miss Wellsman; comm. F. Robinson. "There were no petals on any of the series contributed; the leaves and sepals put it to *L. angusti-*

olium."—Barton. "Not *perenne*, which has larger flowers and different leaf-arrangement, sepals and seeds. It is *L. angustifolium* surely."—Salmon.

Erodium cicutarium L'Hérit., var. Sand dunes, Hightown, Lancs. S., v.-c. 59, August 1, 1918. Flowers pale rose, unspotted. This has been referred to various segregates, but none of the proposed varieties or forms seem to fit it very accurately. It is near *E. pilosum* Jord., but I suppose the groove of the carpels is too marked for that.—J. A. Wheldon. "This does not appear to us *E. pilosum* Bor., but an interesting maritime form. We are preparing a paper upon these seaside plants of *Erodium*."—Baker and Salmon.

E. cygnorum Nees. Waste ground, Bradford, v.-c. 64, June 28, 1918.—J. Cryer. "Yes."—Baker.

Oxalis stricta L. [406]. Garden weed, Caston, Norfolk W., v.-c. 28, August 9, 1918.—F. Robinson. "Yes: we seem to have two forms of this in Britain, of which this is the less hairy plant."—Druce.

Impatiens glandulifera Royle. On the banks of the Dart in a wild part of the Dartington estate, Devon S., v.-c. 3, August 14, 1918.—C. V. B. Marquand. "Specimens spoilt by over-pressure and mildew. This species is frequent by riversides in Devon, so Mr Hiern informs me. It also exists in plenty by the river Ely, near Cardiff."—Riddelsdell.

Acer campestre L. Furness Abbey, Lancs N., v.-c. 69b, November 1, 1918. Leaves only. I have arranged these to show the varying depth of notch and width of lobe. The undergrowth was so dense that one could not see if there were any real bole or boles: the clump is probably three yards long.—D. Lumb.

A. campestre L., var. *leiocarpon* Wallr. [1979]. Near Lower Malden, Surrey, v.-c. 17, July 1, 1918. Wings of fruit crimson-purple, but this is not an essential feature of the variety.—C. E. Britton.

Lupinus nootkatensis Donn. [384]. Edge of lake, Scoulton Mere, Norfolk W., v.-c. 28, June 1, 1918. Long and well established: I have known it for 30 years.—F. Robinson. "Not *L. nootkatensis* of which the diagnosis in *Bot. Mag.* 32. t. 1311 is: 'calycibus verticillatis inappendiculatis, labio inferiore integro, caule foliisque hirsutis, radice perenni.' The flowers in these specimens are not verticillate. I could find no description or plate in the British Museum Library exactly corresponding, but it comes near to *L. perennis* in which the leaflets are 8-9, the flowers at first rose then lilac-blue, peduncled, alternate, with bract at base, 15 or more in a simple terminal cluster (grappe). It is of course planted or a garden escape and may be of hybrid origin."—BARTON. "*L. polyphyllus.*"—A. THELLUNG.

Medicago Falcata L. Sandhills, Blundellsands, Lancs. S., v.-c. 59, September 14, 1918.—W. G. TRAVIS. "Yes; alien here."—DRUCE.

M. minima Desr. Waste ground, Bradford, v.-c. 64, September 10, 1917.—J. CRYER. "Yes; belonging to var. *recta* Burnat, I think."—DRUCE.

M. laciniata Mill. Waste ground, Bradford, v.-c. 64, July 4. 1918. In great abundance.—J. CRYER. "Yes."—DRUCE and THELLUNG.

Medicago ——? Waste ground, Bradford, v.-c. 64, July 29, 1918. All the branches of this beautiful *Medicago* were prostrate and the leaflets quite horizontal.—J. CRYER. "*Medicago praecox* DC."—THELLUNG.

Trifolium suffocatum L. On a small patch of waste ground, Vale, Guernsey, August 1913.—C. V. B. MARQUAND.

Anthyllis Vulneraria L., var. *Allionii* DC. Plentiful on a roadside waste and border of a wood to the south of Alkham near Dover, Kent E., v.-c. 15, July 12, 1918.—C. C. VIGURS. "These closely resemble the plants sent from Stouting, Kent, to the Club (see *Report* 170, 1887) when Dr Lange referred them to *hirsutissima* DC., but as that has red and the Kent plant yellow flowers Beeby referred it to *Allionii*, and on that authority I included it *Br Pl. List.*"—DRUCE. "This is not such good *Allionii* as I have gathered in Kent near Wye (*Watson B.E.C. Report* 11, 1900-1), where the spreading hairs could be seen on the stems practically up to the heads of flowers which themselves were much more hairy. Dr Vigurs' plant however does agree well with Corbière's description of his var. *villosa* (Addit. Fl. Norm. 88, 1895) which I take to be very closely allied to, if indeed separable from, var. *Allionii.*"—SALMON. "Mr Salmon's suggestion may very probably be right as Corbière's plant was found on the chalk hills of Normandy. His diagnosis is (*Bull. de la Soc. Linn. de Normandie*, 4e sér., 9e vol., 2e fasc., p. 88): '*Anthyllis vulgaris* var. *villosa* Corb.—Je désigne sous ce nom une forme de l'*A. vulgaris* qui offre des tiges couvertes, au moins dans le bas, de longs poils étalés, exactment comme dans la var. *sericea* de l'*A. maritima*. E. coteaux calcaires des environs de Louviers (Tetrel !).' This fits Dr igurs' plants well. They are certainly not so hairy as the plants athered in the neighbourhood of Wye, Kent, by Mr Beeby (1887) and Ir Salmon (1900), but the difference is only one of degree. Examples f var. *Allionii* DC. in *Herb Brit. Mus.* and at Kew correspond with he figure in All. *Fl. Pedem.* 1278, t. 19, f. 2; they are small plants of bout 4 inches in height, extremely hairy throughout, with the pod essile or shortly stalked, (in *A. Vulneraria* type the pod is raised on stalk about as long as itself); and as might be expected from the listribution (Mont Cenis, Savoie and Hautes Pyrénées) are quite dis-inct from our plant. Rouy & Foucaud (*Fl. Fr.*) treat *A. vulner-rioides* Bonj. (= var. *Allionii* DC.) as ' une forme ' of equal status vith *A. vulgaris* (= *A. Vulneraria* type). The Kent plant seems to e a variety or subvariety close to type for which the name *villosa* 'orbière may stand if Corbière's specimens be found to agree. And under that these examples of Dr Vigurs are not extreme. The name *llionii* should disappear from our lists."—Barton. "On the eaves of one of Dr Vigurs' specimens is the uredospore form of *romyces Anthyllides*, a by no means common species of Uredine in his country."—Marquand.

Astragalus danicus Retz. [396]. Dry heath, N. Pickenham, Norfolk W., v.-c. 28, July 11, 1918.—F. Robinson.

Coronilla varia L. Yiewsley, Middlesex, v.-c. 21, September 9, 918.—A. Webster.

Vicia tenuifolia Roth. Hedge near Old Park Farm, Bosham, Sussex W., v.-c. 13, June 1, 1918.—R. J. Burdon.

V. angustifolia L. [382]. Dry heath, Croxton, Norfolk, v.-c. 29, May 16, 1918. The shape of the leaf is very different to the usual orm in this neighbourhood, but I believe this is a very variable haracter.—F. Robnison. "I hope Mr Robinson will gather this retty little pale-flowered Vetch again with ripe pods, as it looks most nteresting."—Salmon.

Prunus insititia L. Great Wymondley, Herts, v.-c. 20, April 7 and June 22, 1918. I distributed this to the Watson Club in 1917. For remarks see *Report* p. 56. The large fruit (there was none this year) brings it near to *P. domestica* L., although from other characters it seems better to place it under *insititia*.—J. E. Little. "A large leaved plant near *domestica*. I should like to see the fruit, but suspect it is *insititia* × *domestica*; the leaves are too rugose for true *insititia*, although in shape and size they are near its var. *latifolia* (Jord. & Fourr.)."—Druce. "Yes, I should say rightly named."—Salmon. "I received this plant last year from the other Club with fruit, as Mr Little noted, ' egg-shaped, averaging 27 mm. × 18 mm., purple, with a bloom on the cuticle,' and I very much doubt the ascription of it to *insititia*. Apart from the fruit its characters indicate *insititia*, but I believe the fruit is decisive evidence of a strain of *domestica*."—BARTON.

Rubus fissus Lindl. Bagley Woods, Berks, v.-c. 22, June 1918.—G. C. DRUCE. "Yes."—RIDDELSDELL.

R. sulcatus Vest. Walton in Gordano, Somerset N., v.-c. 6. August 13, 1918.—IDA M. ROPER. "Right. Some of the sheets are mildewed. In one case the stem piece is insufficient (term. lft. badly damaged). Otherwise beautiful specimens."—RIDDELSDELL.

R. dumnoniensis Bab. Quarry on Barton Common, Hants S., v.-c. 11, August 15, 1918. The locality is the same I sent specimens from last year. Seen by Mr Rogers.—L. CUMMING.

R. thyrsoideus Wimm. Passage to Kilsby Church, Northants, v.-c. 32. August 4, 1918. Also Lane from Burby to Lilburne, v.-c. 32, June 24, 1918.—L. CUMMING. "Right."—RIDDELSDELL. Also from Hook Norton, Oxon, v.-c. 23, August 13, 1918. Common in this part of Oxfordshire. The gathering has not been seen by Mr Rogers. It is sent at the request of Mr J. W. White.—H. J. RIDDELSDELL.

Rubus ——? Lane between Hordle and Barton Common, Hants S., v.-c. 11, August 15, 1918.—L. CUMMING. "I first suggested *mucronatus* for this gathering; but Mr Rogers wished to cf. *Questierii*. It is rash, I always feel, to differ from Mr Rogers, but the leaflets seem quite to exclude *Questierii*. Further examination convinces me that the present plant is a weak state of *R. mucronatus*, var. *nudicaulis* Rogers."—RIDDELSDELL.

R. Drejeri G. Jensen, subsp. *Leyanus* Rogers. Barton Common, Hants S., v.-c. 11, August 16, 1918. Several acres of the common were covered with this form last year, but during the winter it had been burnt to the ground. The panicles are very poor, being produced close to the ground by the shoots which had escaped the fire. Seen by Mr Rogers.—L. CUMMING.

R. radula Weihe. Hook Norton, Oxon. v.-c. 23, July 13, 1918. Not seen by Mr Rogers.—H. J. RIDDELSDELL.

R. ——? *oigoclados* Muell. & Lefv. Lane, Shipham on Mendip, Somerset N., v.-c. 6, June 29 and August 21, 1918.—IDA M. ROPER. "Mr Rogers suggests *R. mucronatus* and I quite agree."—RIDDELSDELL.

R. Bloxamianus Coleman. Barnwell Wood, Northants, v.-c. 32, August 2, 1918.—L. CUMMING. "Named by Mr Rogers, I believe, and so beyond my criticism."—RIDDELSDELL.

R. dasyphyllus Rogers. Bank above Glen Frome, Frenchay, Gloster W., v.-c. 34, June and July 1918.—J. W. WHITE. "I agree."—RIDDELSDELL.

R. dumetorum Wh. & N. × *rusticanus* Merc. Wigginton Heath Oxon, v.-c. 23, July 14, 1918. I believe this is right, but the specimens are poor. Not seen by Mr Rogers.—H. J. RIDDELSDELL.

R. Balfourianus Blox. Swerford, Oxon, v.-c. 23, June 6 and August 19, 1918. A small form with pink petals dotted with darker red. Known in this neighbourhood for many years. Not seen by Mr Rogers.—H. J. RIDDELSDELL.

Potentilla Sibbaldi Hall. fil. Origin near High Cup Nick; cult. hort. Shipley, June 21, 1918.—J. CRYER. "It is pleasing to see an English specimen. Its occurrence near High Cup Nick supports the correctness of the record of *Cerastium Cerastoides* from that area; it should be sought for on Cross Fell."—DRUCE.

Alchemilla pratensis Schmidt. Heathy hillside at 1500 ft. near Buxton, v.-c. 57, August 18, 1918.—J. W. WHITE. "Yes."—DRUCE and SALMON. "Yes; several pedicels with scanty patent hairs."—PEARSALL.

Agrimonia odorata Mill. Banks by Strangford Lough, SE. of Newtonnards, Co. Down, August 2, 1918.—C. H. WADDELL. "Undoubtedly *odorata*."—SALMON. Also, fruits only, near Old Park Wood, Fishbourne, Sussex W., v.-c. 13, October 8, 1918.—R. J. BURDON and J. E. LITTLE. "Growing in great abundance with *A. Eupatoria* but remaining very distinct both in its taller and more branching habit and in the fruit characters. The racemes were not, as Hooker characterises them, denser than in *A. Eupatoria*, but quite as lax at fruiting time and much longer. Since *A. Eupatoria* is slightly aromatic, that character fails as a distinction between the two."—J. E. LITTLE. "Fruits unmistakable."—SALMON. "Mr Salmon tells me this is a new record for that part of Sussex."—BARTON.

Rosa micrantha, var. *permixta* (Déségl.). Cadbury Camp, Tickenham, Somerset N., v.-c. 6, June 25 and September 24, 1918. Styles glabrous.—IDA M. ROPER. "The barer leaflets with hairs mostly confined to the midribs and ovoid fruit may justify the varietal name, but at best the variety is so close to the type as to be hardly deserving of separation. Authors differ in their interpretation of it. The fruit does not appear to have fully developed."—Barclay. "At least equally near type *micrantha* Sm., if indeed the two are really separable."—Wolley-Dod.

R. eglanteria L., var. [R. 7611]. The Glen, Peebles, v.-c. 78, September 1918.—G. C. Druce. "I should call it var. *comosa* (Rip.)."—Barclay. "Agrees very well with *R. comosa* (Rip.), our commonest *eglanteria* segregate."—Woolley-Dod.

R. eglanteria Huds., var. *comosa* (Rip.). Grey Abbey, Co. Down, September 3, 1918. A common rose and native in the district. The fruits have a few acicles. It seems nearest to *comosa* but does not quite correspond.—C. H. Waddell. "Correctly named."—Barclay. "Correctly named though the glabrous styles seem to point to a *micrantha* form. Mr Waddell however informs me that the habit is quite that of *eglanteria* and that *micrantha* is not known for that part of Ireland. I do not remember seeing a glabrous-styled *eglanteria* before."—Wolley-Dod.

Rosa ——? [R. 7139]. Noke, Oxon, v.-c. 23, August 1918.—G. C. Druce. "So far as I can judge from the very poor specimen it is a variation of *R. tomentosa* Sm. of the *scabriuscula* group; not identical, like many others, with any of the named varieties."—Barclay. "I think this is the Rose Mr Druce recently submitted to me for a name, but the sheet now sent is not a very good one. It is best placed under *R. scabriuscula* Sm."—Wolley-Dod.

R. tomentosa Sm. of group *omissa* Déségl. [42/18]. Near Auchterarder Railway Station, Mid Perth, v.-c. 88, September 5, 1918.—W. Barclay. See *Watson B.E.C. Report* 183, 1908-9 (No. 16). "A striking looking plant having the mixed characters of *R. suberecta* Ley and of *R. tomentosa*, var. *Woodsiana* Groves, though it does not satisfactorily fit either. I have already stated in *British Roses*, p. 8, that I think var. *Woodsiana* best placed under *R. suberecta*, and Mr Barclay's plant must belong to that association. Like the majority of Roses it seems impossible to give a precise name without qualification."—Wolley-Dod.

R. involuta Sm., var. (= *R. tomentosa* Sm. of group *omissa* Déségl.) × *spinosissima* L. Near Auchterarder Railway Station, v.-c. 88, September 5, 1918. The enclosed curious form, a hybrid of the *involuta* group, was formerly sent to the Watson Club, but I think there must be many members of the B.E.C. who will be glad to receive a specimen. The other *omissa* form grows close beside it and is in my opinion one of the parents, as there is in many points a strong likeness between them. The hybrid leans much more to the *omissa* than to the *spinosissima* side.—W. BARCLAY. See *Watson B.E.C. Report*, 141, 1907-8. "Undoubtedly the result of hybridisation of Mr Barclay's [42/18] with a *spinosissima* form. The likeness is striking but as the collector points out, the *spinosissima* influence is almost suppressed except in the armature which extends even to the fruit, as often occurs in such hybrids."—WOLLEY-DOD.

R. omissa Déségl., var. *resinosoides* Crép. The Glen, Peebles, v.-c. 78, September 1918. Rare; I first gathered this in Britain in Perthshire.—G. C. DRUCE. "Doubtless a variation of the group *omissa* Déségl. I hardly think it can be called var. *resinosoides* Crép., which however does not appear to be more than a slight variety."—BARCLAY. "I think correct. It agrees very well with the description."—WOLLEY-DOD.

Pyrus hybrida Ehrh. [R. 1117]. Goodwood Park, Sussex W., v.-c. 13, July 1918. *P. hybrida* (L.) Smith. *Aria hybrida* Beck. *P. fennica* Syme. Planted: not mentioned in "*Trees of Goodwood.*" —G. C. DRUCE.

Crataegus monogyna × *oxyacanthoides*. [R. 1871]. Noke, Oxon, v.-c. 23, July 1918. With both parents, fruit often sterile; on the whole nearer the latter parent.—G. C. DRUCE.

Saxifraga hypnoides L., var. *robusta* mihi. [4033]. Hort. West Monkton, May 16, 1918. Last spring having been cold and dry, these specimens are smaller than usual, and more like wild ones. Sent to Mr Hunnybun from W. Ireland, probably Black Head, Co. Clare; grown in my garden for some years.—E. S. MARSHALL.

S. stellaris L. Cader Idris, 2000 ft., Merioneth, v.-c. 48, July 24, 1915.—W. C. BARTON. Also from Darn Gill, Cumberland, v.-c. 70, July 23, 1914.—P. M. HALL.

Callitriche palustris L. (= *vernalis* Koch). [387]. Ditch, roadside, Rocklands, Norfolk, W., v.-c. 28, June 14, 1918.—F. ROBINSON. "The material was unsatisfactory, and led to conflict of opinion. Perhaps Mr Robinson will be able to send another gathering to the Club for careful examination as a whole."—BARTON.

C. intermedia Hoffm. (= *hamulata* Kuetz). [401]. The Punch Bowl, Fretham, Norfolk W., v.-c. 28, July 20, 1918.—F. ROBINSON. "Correct."—BENNETT and SALMON. "Comes under var. *angustifolia* Hoppe."—DRUCE.

Epilobium obscurum Schreb. × *l.* Waste ground at Meole Brace, two miles south of Shrewsbury, Salop, v.-c. 40, September 1918, in a locality which has produced several interesting species and forms of this genus.—J. C. MELVILL. "*E. obscurum* Schreb. I see no trace of any other species in these plants."—MARSHALL.

Epilobium ——? [402]. Damp part of heath land, Barnham Common, Norfolk W., v.-c. 28, August 1, 1918.—F. ROBINSON. "*E. obscurum* Schreb."—MARSHALL.

E. lanceolatum S. & M. [1623]. North Wood, Cuxton, Kent W., v.-c. 16, June 25, 1916. All specimens have been seen by Mr Marshall, who confirms the name.—C. E. BRITTON.

Helosciadium repens Koch. Port Meadow, Oxford, v.-c. 23, July 25, 1918. Growing in a ditch containing 8 inches of water and in the overflow by the ditch, and showing the effect of the surroundings in lengthened stem and lengthened leaves with shallower lobes. The plant covers a very large area of the meadow.—H. J. RIDDELSDELL. See *Report* 570, 1916.

Chaerophyllum aureum L. Callander, Perth W., v.-c. 87, August 1918. Abundant by the Teith. I think the narrow-leaved form of *Anthriscus sylvestris* (var. *angustisecta*) may have helped to cause this plant to be so long overlooked at Callander.—G. C. DRUCE.

Anthriscus sylvestris Hoffm., var. *latisecta* Druce. Fruiting specimens. Burpham, Sussex W., v.-c. 13, July 1918. Common at Burpham as elsewhere in South and Central England.—G. C. DRUCE. "No leaves, only fruit was sent."—BARTON.

Oenanthe pimpinelloides L. Old Park Farm, Bosham, Sussex W., v.-c. 13, July 18, 1918.—R. J. BURDON.

Aethusa Cynapium L., var. *agrestis* Wallr. [350]. Stubble field, Kelsham Farm, near Petworth, Sussex W., v.-c. 13, September 17, 1918. Mr Druce confirms the name. Has this been tested by cultivation? It seems at least possible that it is a late autumn form due to conditions. Perhaps some member would grow it from seed.—W. C. BARTON.

Galium palustre L., var. [R. 4217]. In pasture, Goodwood Park, v.-c. 13, July 1918.—G. C. DRUCE. "Why var.? Is not this *palustre*?"—SALMON.

G. sylvestre Poll. Foot of Downs, Reigate, Surrey, v.-c. 17, May 28, 1917.—C. E. SALMON. "The older name for the aggregate species is *G. pumilum* Murray."—DRUCE.

Asperula taurina L. Origin Selkirk; cult. hort. Oxford, July 1918. Sent to show the bright dark-orange-coloured underground ooting stem, a colour I am afraid which disappears in drying.—G. C. Druce.

Solidago lanceolata L. Roadside near Perranporth, Cornwall, W., v.-c. 1, August 6, 1918. Plants from a well-established colony which I have watched for twelve years past. For an undoubted alien its occurrence here amongst native grasses by a country road far from houses, gardens and rubbish heaps, is somewhat unexpected.—F. Rilstone. "Yes; an alien of N. American origin."—Druce.

Filago apiculata G. E. Smith. Maulden, Beds., v.-c. 30, August .2, 1918. On a patch of loose sand (greensand), sometimes cultivated, but derelict this year. The few localities for which it has been recorded for Beds. all lie along the greensand.—J. E. Little. "Yes, good specimens."—Riddelsdell.

Antennaria dioica Gaertn. Rocks at Craigga More, Galway W., August 13, 1913.—W. C. Barton. Also from rocks about Wynch Bridge, Teesdale, July 1914.—P. M. Hall.

Gnaphalium luteo-album L. [375] Sandy lane, Thompson, Norfolk W., v.-c. 28, August 1917. Still abundant in this station.—. Robinson.

G. uliginosum L., var. *pilulare* (Wahl.). [352]. Roadside near Bosham, Sussex W., v.-c. 13, September 16, 1918. Seen also at Pagham, Lodsworth, Petworth and Midhurst.—W. C. Barton. "Yes, it seems identical to the plant from Castlemorton Common (S. H. Bickham), confirmed by Mr Druce."—Salmon. "Wahlenberg, *Fl. Lapp.* 205, t. 13, describes *Gnaphalium pilulare* as 'species foliis involucralibus lanceolatis glabratis, seminibus hispidulis, caule modo et tantummodo ad radicem foliis minoribus paucis praedito, glabriusculo, vix ultra sesquipollicari; foliis fere omnibus usque majoribus sub capitulo florum positis, lanceolatis, fere glabris.' Authentic specimens in *Herb. Brit. Mus.* and in *Herb. Gay* at Kew answer to this description, except that the leaves are not truly glabrous but the lower have a few long white hairs and others are more thickly clothed with them, though not so woolly as in our plants. Later authors mention only the muricate achenes when distinguishing var. *pilulare*, though they equate their var. with Wahlenberg's plant. And to judge by material at Kew continental botanists like our own apply the name *pilulare* to plants differing from *G. uliginosum* type only in the achenes."—Barton.

Ambrosia artemisifolia L. Sandhills at Blundellsands, Lancs S., v.-c. 59, September 14, 1918.—W. G. Travis. "Yes, the male plant."—Druce.

Bidens tripartita L., var. *integra* Koch. Gravelly shores of Urswick Tarn, Lancs. N., v.-c. 69b, September 7, 1918.—W. H. Pearsall. "I presume so. This species in nature seems unwilling to conform to the limits laid down by Hooker (*Stud. Fl.*) and Williams (*Prodr.*) respecting the number of pappus bristles; these authors say two, whereas one finds almost as frequently three."—Salmon.

Achillea Ptarmica L., var. with finely serrated leaves. [404]. Heathland in gorse, Scaning, Norfolk E., v.-c. 27, August 5, 1918.—F. Robinson. "Leaves subglabrous only, finely serrated, therefore not *angustissima* Heinm., which has very narrow glabrous leaves."—Druce. "The fine serrations are certainly closer together (and thus more minute) than in the normal plant. However I find in my herbarium a certain variability as to this character."—Salmon. "Not distinguishable from type I think; in one of my gatherings from Wales are included plants which vary from serrations as fine as in Mr Robinson's plants to normal. Material in *Herb Brit. Mus.* bears out Mr Salmon's remarks, and continental plants at Kew put under type have serrations several times larger than in our normal plants."—Barton.

Petasites ovatus Hill, pistillate form. Common about the streams, Hook Norton, Wigginton, &c., Oxon, v.-c. 23, though not of frequent occurrence in England, I believe. This gathering was from a very wet copse, Wigginton, April 23, 1918. The mature leaves here are very much smaller than usual; the normal plant, in exactly similar situations of shade and moisture, in S. Wales and other parts. has enormous leaves.—H. J. Riddelsdell. "Yes, it was found for the first time in the vicinity near Banbury, probably by Bobart. See Dillenius *Hort. Eltham.* 309, 1732, where it is figured."—Druce. On distribution of male and female plant see a note in *Journ. Bot.* 251, 1884.

Senecio squalidus L. St Blazey Station, Cornwall E., v.-c. 2, May 10, 1918.—F. Rilstone. "Yes, the type."—Druce.

S. vulgaris L., var. *radiatus* Koch. Rocquaine Bay, Guernsey, August 1913.—C. V. B. Marquand. "*S. vulgaris* L., var. *lanuginosus* (Trow)."—Druce.

Centaurea nigra L., forma. Billingshurst, Sussex W., v.-c. 13, August 1918.—A. Webster. "This is very similar to a Knapweed found growing in Surrey, and like that is marked by distinctive features which prevent it being referred to *C. nigra*. It has all the essential features of *C. microptilon* Grenier, to which I do not hesitate to refer it. Whether this name has already been suggested for any of our British Knapweeds is unknown to me, but that this form occurs n England I have no doubt. *C. microptilon* has been described in etail by Grenier & Godron and by Boreau, and when the characters ssigned to it are analysed and those common to others rejected it is een to be distinguished chiefly by its medium-sized ovoid heads with arrow lanceolate acuminate appendages exposing the underlying hyllaries and with the appendages more or less erect but distinctly urved outwards in their upper parts, this feature being most apparnt on the well formed but unopened heads. Normally *C. microp- ilon* is rayless and the fruits have no pappus. Mr Webster's plant s marked by rather broader upper leaves than is the case with uthentic French examples which have linear upper leaves, and nother point in which it differs from named examples of this form is that some fruits are provided with a number of short (about ⅓ mm.) stiff bristles representing a pappus, whilst other fruits are quite glabrous at the summit. But in spite of these divergences, taking the sum of all its characters, this plant is *C. microptilon* Gren. I find hat in authentic herbarium specimens of *C. microptilon* the comarative width of the disks of the appendages and the length of its teeth do not always accord with the authors' descriptions, and Mr Webster's plant supplies a similar instance. *C. microptilon* also ccurs in Surrey (Lower Morden, &c.), Berkshire (East Hindred, J. Ball, 1842), and I have seen specimens in herbaria also to be referred to this. The Lower Morden plant is indistinguishable from French xamples. In drying specimens the pressure should be so regulated that the recurved feature of the appendages is well displayed."—BRITTON.

Hieracium Peleterianum Mér. South Cliffs, Guernsey, September 1913.—C. V. B. MARQUAND. "I believe this is identical with my plant from Grandes Rocques on the west coast of Guernsey, August 15, 1912, sent to the Watson Club as *Hieracium Pilosella* L., var. *concinnatum* F. J. H. Mr Linton agreed, but Mr Marshall preferred to leave it under type as a dwarf state, pointing out that 'the heads are not quite epilose, too densely glandular and not cano-floccose enough.' See *Watson B.E.C. Report*, 1912-3."—BARTON. "This is the same form of *H. Pilosella* as Mr Barton's from Grandes Rocques, 1912."—MARSHALL. "*H. Pilosella*, var. *concinnatum* F. J. H., I believe."—CRYER.

H. praealtum Vill. Railway bank, Hungerford, Berks, v.-c. 22, September 1918 Coll. C. P. Hurst: comm. G. C. Druce. Discovered in some quantity by Mr Hurst in 1918. The same plant occurs abundantly on the railway bank near Castlethorpe, Bucks., where I have known it for many years. Its persistence and abundance earn for it a place in our Floras.—G. C. DRUCE. "Yes."—CRYER. "Matches some of the many forms under this name in *Herb. Brit. Mus.*"—BARTON.

H. Marshalli Linton. Winter Corrie, &c., Forfar, v.-c. 90, and Ben Laoigh, Mid Perth, v.-c. 88, August 1916.—G. C. DRUCE.

H. pellucidum Laest. Cranham Woods, Birdlip, Gloster E., v.-c. 33, June 20, 1918.—IDA M. ROPER. "This appears to be a shade form of the plant so named by Elfstrand and issued as No. 37 of the Linton's set. It probably comes under *H. pellucidum*, but the type is now identified with var. *lucidulum* Ley."—MARSHALL. "No; I know *H. pellucidum* (= Ley's *lucidulum*) well in S. Wales. This is a *serratifrons* form; it will not do for *cinderella* Ley which has a cuneate-based head, but must come under var. *lepistoides* Johans. which in other respects it fits well. I know the plant already from Cranham Woods."—RIDDELSDELL. "Not *pellucidum* which has smaller, much darker heads, shorter peduncles with short, more uniform dark styles, black glands, ciliate ligules and very white pappus. These have greyish green heads, longer peduncles, ligules glabrous in my specimen, brownish white pappus and yellow styles. I name it *H. grandidens* Dahlst. In *H. lepistoides* Johans. the heads are black in dried specimens (blackish green in fresh) with short and longer stout black glands with strong bases, peduncles are stouter and darker with similar black glands, and the phyllaries are less floccose on the margins. The glands on peduncles and phyllaries are weaker and much less dark in Miss Roper's specimens."—CRYER. Later: "My specimen is certainly more like the description of *lepistoides*; but *grandidens* grows in Cranham Wood too; I have specimens from there. I suspect a mixture."—RIDDELSDELL.

H. acroleucum Stenstr., var. *daedalolepium* (Dahlst.). [164]. Crevices of rocks at 400 ft., Arthog, Merioneth, v.-c. 48, June 14, 1915. Named by Mr Linton and agreed to by Mr Marshall.—W. C. BARTON.

H. umbellatum L., var. Cliffs by the sea about Ilfracombe, Devon N., v.-c. 4, August 1918. A form with broad and very fleshy leaves; perhaps hardly worth a name.—H. J. RIDDELSDELL. "Var. *monticola* I should say, modified by the situation."—MARSHALL. "Specimen poor, diseased, probably with eel worm, badly developed and therefore untypical leaves and inflorescence."—CRYER.

Taraxacum ——? [R. 7116]. Chertsey, Surrey, v.-c. 17, June 1918.—G. C. DRUCE and Lady DAVY. "I should like to see this in ripe fruit. The exterior phyllaries seem too broad for any *officinale* form, and the whole plant has the look of *udum*. Both this and *palustre* are remarkably scarce in the county."—SALMON.

E. ciliaris L. Leaves 3-4 in whorl. Chynhale, near Perranzabuloe (wrongly Perranarworthal on labels), Cornwall W., v.-c. 1, gust 25, 1911. Syme (*E.B.* ed. iii.) and Bab. (*Man.*) state that th *Tetralix* and *ciliaris* have leaves 4 in a whorl, while *cinerea* has aves 3 in a whorl. This distinction does not hold good at least in is locality where plants of *ciliaris* with leaves 3 in a whorl were quite equent.—W. C. Barton.

E. ciliaris × *Tetralix* (*E. Watsoni* Benth.). Plentiful in the me locality as the above.—W. C. Barton. Also from the Dorset ation.—A. B. Jackson.

Pyrola rotundifolia L. Grande Mare, Guernsey, August 16, 12. This is the plant discussed by Mr Bennett in *Journal of otany* 332-4, 1893. I sent specimens to the Watson Club in 1912 d Mr Marshall wrote in the *Report*: "the plant received differs om all those in my herbarium by its smaller orbicular foliage and ore numerous flowers (12, besides what looks like a rudimentary e at the apex); the fruit is also appreciably smaller. . . . There still one blossom with the petals unshed though it was collected August 16, by which time typical *rotundifolia* would be long over the south of England."—W. C. Barton.

P. minor L. East Force Garth, above High Force, Teesdale, urham, v.-c. 66, July 2, 1914. In a damp open meadow with *rchis maculata* and *Habenaria albida*.—P. M. Hall. Also from ongue, Sutherland W., v.-c. 108, July 25, 1916. Coll. J. W. cDougall; comm. W. C. Barton.

Monotropa Hypopitys L., var. *glabra* Roth. Damp sand dune ollows, Hightown, Lancs. S., v.-c. 59, July 31, 1918. This is the sual form in which the peduncles are approximately as long as the racts.—W. G. Travis. "Yes; *Hypopitys Monotropa* Crantz, var. *labra* (Roth)."—Druce. "Yes, the common form in Britain. The airy plant seems quite rare with us."—Salmon.

Primula ——? Meadow near Pullborough, Sussex W., v.-c. 13, ay 6, 1918. In great abundance in one place growing with *P. caulis* and *P. veris*. In every shade from dark brown to orange.— . Webster. "Good evidence of *P. veris* in this; the other parent urely a garden *polyanthus*."—Barton. "There is a coloured ybrid between *P. vulgaris* and *P. officinalis* not infrequently grown under the name of *P. variabilis* and this plant appears to be identical ith it."—F. J. Chittenden. "Under Mr Webster's guidance I aw the habitat of this plant in May 1919 through the kindness of ur member, Dr Harley. There are many thousands of the plant rowing there, affording a beautiful sight. On one umbel was one lower like a cowslip, others of the hybrid, while one or two were rimrose-like. The origin may be accounted for by Dr Harley scattering cowslip seeds supplied by a seedsman many years ago in the field, but that a pure strain of *P. veris* was not supplied; from the abundance of specimens it is evident that the cross is fertile."—Druce.

Anagallis arvensis L., var. *carnea* Schrank. Guernsey, August 1913.—C. V. B. Marquand.

Microcala filiformis Hoffm. & Link. Lancresse Common, Guernsey, August 1913.—C. V. B. Marquand.

Erythraea Centaurium Pers., var. *capitatum* Koch. Sandy banks by the sea, Hilbre Island, Cheshire, v.-c. 58, June 22, 1918.—W. G. Travis. "Yes; *Centaurium umbellatum* Gil., var. *capitatum* (Koch). A fine form with broad and large stem leaves."—Druce. "I take this to be var. *capitata* Koch."—Salmon.

Centaurium pulchellum Druce. Cobo, Guernsey, September 1913.—C. V. B. Marquand. "The same plant and from the same spot as my [242], which was dealt with in *Rep. B.E.C.* 578, 1916. Mr Salmon considers it comes under f. *contracta* Wittr."—Barton.

Cicendia pusilla Griseb. Damp ground, Paradis, Guernsey, July 25, 1912. The plant was plentiful in two localities in 1912; two years later I could find only a limited number and those much smaller. Doubtless it varies according to the season.—W. C. Barton.

Gentiana Pneumonanthe L. Golf Links, Woodhall Spa, Lincs., v.-c. 54, August 6, 1918. Coll. M. J. Hill; comm. J. E. Little.

G. Amarella L. Sandy coast, Rosses Point, near Sligo, August 18, 1913. Doubtless a state due to exposure.—W. C. Barton.

G. Amarella × *germanica* (× *Pamplinii* Druce). Ashmansworth, Hants. N., v.-c. 12, September 15, 1915. With parents.—W. C. Barton. See *Report* 1915.

Symphytum officinale L., var. *purpureum* Pers. = *S. patens* Sibth. Ditch bank, near Flax Bourton, Somerset N., v.-c. 6, June 1918. See Mr Bucknall's *Revision*; also *Journ. Bot.* 279, 1900, and 333, 1912.—J. W. White.

S. caeruleum Petitmeugin. (*S. officinale*, var. *ochroleucum* × *peregrinum*). Hort. Univ. Bristol, June 1918. A sterile hybrid, in leaf character more nearly intermediate between the parents than is × *S. discolor*. Corolla in bud rose-tinted with the apex greenish;

maturity pale blue or bluish-rose. Seldom met with as a wild nt, though contained in several botanic gardens in this country d in Switzerland. It may have come to Bristol from Germany en the botanic garden was originally laid out by a former (Saxon) ofessor.—J. W. White.

S. asperum Lepechin. (*S. asperrimum* Donn in Curt. Bot. Mag.; us in DC. Prod.; and Bieb. Fl. Taur. Cauc., quoted by Babington the *Fl. Bathon.*). Among introduced Comfreys this is one of the rer species, being confused with *S. peregrinum* Ledeb. from which can be easily distinguished by its subpetiolate upper leaves and all flowers with obtuse calyx segments. Cultivated at Clifton by Bucknall from a plant obtained from East Lothian through Mr aser of Leith, June 1918.—J. W. White.

S. caucasicum Bieb. From Mr Bucknall's garden, Clifton, May 18. Mr Bucknall has two forms of *caucasicum* in cultivation. One th pale blue flowers was derived from the Chelsea Physick Garden; other, given him by the Rev. E. S. Marshall, is of slighter build d has flowers of a much deeper blue, but does not differ in any ential character. This may be the *S. racemosum* R. & S., but Mr ucknall is not certain.—J. W. White.

Myosotis palustris Hill, var.? [R. 1401]. Muddy ridings of ytham Wood, Berks, v.-c. 22, July 1918.—G. C. Druce. "Beyond rather erect strict growth, in what way does this differ from the dinary plant?"—Salmon. "Nearly typical, I should say."— arsall.

Myosotis ——? [R. 1971]. Shallow brook, Amberley Wild Brooks, ssex W., v.-c. 13, July 1918. *Myosotis caespitosa* Schultz, growing the water of shallow ditches. It is not of a caespitose growth.—G. C. uce. "*M. caespitosa.*"—Salmon.

Lithospermum arvense L. Swalcliffe Grange, Oxon, v.-c. 23, in rnfields, June 2 and 9, 1918. Sent to show the red root which parently gives occasion for the colloquial name 'Painting root.'— J. Riddelsdell.

Verbascum nigrum × *pulverulentum.* [411]. Waste land with rents, Watton, Norfolk W., v.-c. 28, August 8, 1918. *Verbascum grum* × *pulverulentum* × *Thapsus.* [410]. Same locality, gust 5, 1918. These two plants grow together on a piece of waste nd adjoining my premises. When I came to live here about 16 ars ago, *V. Thapsus* and *V. nigrum* were growing there wild; I troduced *V. pulverulentum.* Many hybrids have come up in the st seven or eight years. My [410] I think shows traces of all three parents; [411] shows less trace of *Thapsus* except in the size. All these plants are six feet in height and all show traces of *nigrum* in the flowers. Unfortunately I did not preserve any flowers or seeds, but I hope to do so next year. The flower of [410] shows less of *nigrum* than the other and this may be *V. pulverulentum* × *Thapsus* only. They are a most glorious sight when in full flower.—F. ROBINSON. "[411] Yes; the × *V. Schottianum* Schrader. [410] This may well have the parentage suggested by Mr Robinson, the presence of *nigrum* and *pulverulentum* seem obvious."—DRUCE.

Linaria repens × *vulgaris*. Hedgebank, Aberystwith, Cardigan, v.-c. 46, July 1918. Over about a square mile there grow several forms of the hybrid of which I have distinguished at least five. The largest has flowers a dull bluish green all over, with rather deeper violet veins; this was all cut down when I tried to get it this year. Some have a pale primrose lip and spur with rather bluer wings or standard. Most are primrose with a bright yellow patch on the lip. Others are all blue in various shades, merging into *repens* so gradually that one can only judge by the stouter habit and larger capsules that one has a hybrid. These all come from north of the Rheidol. I have however seen one stray plant of a primrose colour far away on the south side. *L. repens* is rather widely distributed here and *L. vulgaris* also but they come together only in two or three small areas so far as I have noticed.—T. STEPHENSON. "Yes, a good intermediate."—DRUCE. "Yes; nice specimens of this hybrid (= *L. sepium* All.). The seeds from the fruiting example sent me seem all shrivelled and sterile; is this so always in this hybrid?"—SALMON.

Scrophularia ? cinerea Du Mortier. [237]. Hedgerow of lane below hill, Freshwater, Wight, v.-c. 10, August 27, 1916. Few plants in shade and open.—W. C. BARTON. "This seems to be the plant which English botanists have called by the name, but Rouy treats *cinerea* Dum. as a race of *S. alata* whereas the alliance of these plants is with *aquatica*. Is it possible that each species has an entire-scale form? Beeby says it is the prevailing British form of *aquatica* and he had never seen any other. See *Report* 491, 1895."—DRUCE.

Veronica verna L. [383]. Dry heath, Santon, Norfolk W. v.-c. 28, May 25, 1918. Abundant but I was rather late for it.—F. ROBINSON.

Euphrasia brevipila B. & G. [150]. Arthog, towards Cader, Merioneth, 800 ft., v.-c. 48, June 12, 1915.—W. C. BARTON. "Yes, quite typical."—BUCKNALL and MARSHALL. "Although there are a few scattered glands these plants look to me more like *E. borealis* than *E. brevipila*."—PUGSLEY. "Not at all like *borealis*; the texture of e leaves is quite different, and the general appearance gives no ggestion of *borealis*. I think it is *brevipila*."—Drabble. "*E. revipila*, with short glandular hairs on the stem as well as on the racts and calyx."—Pearsall.

E. brevipila B. & G. Light pasture land at Wigginton, Oxon, 0 ft., v.-c., 23, June 5, 1918.—H. J. Riddelsdell. "Yes."—ucknall, Lumb and Marshall. "Yes; flowers small. There are a few ort glandular hairs on the stem as well as on the bracts and calyx." -Pearsall. "These plants have the facies of *E. borealis*, but they re gathered young and it seems uncertain whether the spikes would ongate and the calyx become accrescent in fruit. Some of the ecimens are glabrous while others show a few of the shortly-stalked lands characteristic of *E. brevipila*, and they may prove to be rrectly named."—Pugsley. (Later): "The later specimens subsequently forwarded, although showing a few shortly-stalked glands milar to those of *E. brevipila*, seem to me to resemble *E. borealis* nd are essentially different from my specimens named *E. brevipila* y Townsend, which agree with Gremli's brief description in *xcursionsflora*, ed. viii. (1896)."—Pugsley. "Quite unlike *orealis*; I think they are *brevipila*."—Drabble.

E. brevipila B. & G., forma *subeglandulosa* Buckn. Poor pasture, reenscoe, Dalton in Furness, Lancs. N., v.-c. 69b, June 28, 1918. his is the common form in N. Lancs., I have not yet seen the type ere.—W. H. Pearsall. "Correct, I believe, but it should be called ar. *subeglandulosa* Townsend."—Bucknall. "Doubtless correct. hese specimens are mostly eglandular; the occasional glands present n some of them are very short-stalked."—Marshall. "These eem to me to be fine specimens of *E. borealis* Towns. I have preisely similar plants from Yorkshire and from Scotland so named by ownsend, and these agree well with his description. Besides differng in the absence of glands, the leaves of these plants are too broad nd obtuse, the spikes too dense, the fruiting calyx too accrescent and he capsules too broad and emarginate for *E. brevipila*."—Pugsley. ‘ The leaves and bracts in my specimens are quite eglandular; I hould call this rather fine *borealis*."—Drabble. "Correctly named." —Lumb.

[Mr Pugsley writes *in lit.*:—"It seems to me that people are alling more than one fairly distinct form by the name *brevipila*. The question as to what is typical *E. brevipila* Burnat & Gremli seems o need further investigation."]

E. brevipila B. & G. (eglandular). Boggy ground, Wheal Frances, ear Perranporth, Cornwall W., v.-c. 1, August 22, 1918. Named y Mr Druce. A few stalked glands appear to be invariably present on the corolla, otherwise the plant is eglandular.—F. Rilstone. "Not *E. brevipila*. The flowers are brightly coloured and conspicuous, and I consider it to be *E. Kerneri* drawn up by the surrounding herbage. Glands on the corolla do not count."—Bucknall. "I should have called this *E. Kerneri*. The corolla tube shows distinct elongation after anthesis and the capsule is much shorter than the calyx."—Wheldon. "I am doubtful about this plant. It may be correctly named, though eglandular, but I rather think it is a slender form of *E. Kerneri*."—Pugsley. "I think *Kerneri*."—Barton. "I think this must certainly come under *Kerneri* as we understand it at present."—Drabble. In the specimens I examined there were no elongated corolla tubes and on one or two of the plants there were a very few short-stalked glands. I cannot accept *E. Kerneri*; the plants are difficult but nearer *E. brevipila* in my judgment."—Pearsall. "This is correctly named, but the remark 'eglandular' is incorrect. Some sheets are very misleading through containing slender plants only. They have the thin texture of *Kerneri*; there is no projecting style and no lengthened tube. The habitat is a *brevipila* one."—Lumb.

Euphrasia —— ? [P. 7641]. The Glen, Peebles, v.-c. 78, September 1918.—G. C. Druce. "Mr Pearsall, Mr Lumb and I independently examined the whole gathering with a microscope and found that some specimens have numerous short-stalked glands, some few, and others are eglandular. All attempts to divide them into groups broke down and I think all must go to one species."—Barton. "I agree that these are all the same species. Mr Bucknall sent me specimens of his *gracilis-primaria* and supposed hybrid, but I don't think these similar. I can't name them with confidence."—Pearsall. "This is a difficult gathering for me to name and the specimens are not very satisfactory. Some of them show the short-stalked glands characteristic of *E. brevipila* and I think they should be referred to this as an abnormal form, in spite of their slender habit and small foliage recalling *E. gracilis*."—Pugsley. "I had referred this to *E. gracilis*, var. *primaria* Fr., but having compared it with specimens from Kinlochewe (see Towns. *Monogr.* p. 35), I am not satisfied that they are the same. In foliage, flowers and capsules it is very like the Woodford gathering which I thought might be Fries' variety (see my *Brit. Euphr.* p. 22), and hybrids with *E. brevipila* (p. 15), but the habit of these, perhaps due to circumstances of growth, is very different. The Woodford gathering consists of a series passing from a simple eglandular form like *E. gracilis* to almost typical *E. brevipila*, while the Peebles plants are nearly alike except for the presence or absence of glands. The blue medium-sized flowers might well belong to *E. brevipila* × *gracilis*, and I can only suggest that these, together with × *E. difformis* Towns., are different forms of that hybrid. But I do not think that shortly-stalked glands always denote the influence of *E. brevipila*, and it may be that the Peebles plant is worthy of specific rank. It would not be advisable, however, to describe it as a new species until younger and better specimens are available."—BUCKNALL. "I think certainly not *gracilis*, *curta* nor *brevipila*. It appears to be a poor little starved plant, which it would be most unwise to name."—DRABBLE.

Euphrasia —— ? Bank by the sea, Grey Abbey, Co. Down, August 3, 1918. And *Euphrasia* —— ? Mountstewart, Co. Down, August 1918.—C. H. WADDELL. "I understand that Mr Bucknall refers these two gatherings to his *E. campestris*, var. *neglecta*. They appear to me however to be forms of *E. brevipila* rather than of *E. campestris*. The glandular hairs of the foliage and calyx are very shortly stalked as in *E. brevipila* and are very sparingly and irregularly distributed. In authentic *E. campestris* sent out by Jordan (in *Herb. Brit. Mus.*) the glandular hairs are as in *E. Vigursii*, *i.e.*, longer and much more numerous, and hence approaching the hair-clothing of *E. Rostkoviana*. In habit and flower also these specimens are unlike *E. campestris* and rather recall *E. nemorosa*, to which (with *E. stricta*) Gremli himself in *Excursions-flora* likens *E. brevipila*. The more than usually compact habit of these plants may be due to situation or exposure. I have precisely similar specimens from Dorset labelled *E. brevipila* by Townsend."—PUGSLEY. "I accept *E. brevipila*, but in the specimens I saw the glandular hairs were quite numerous on the nerves and margins of bracts and especially on the calyx teeth. Apart from this the foliage was very meagre in clothing."—PEARSALL. "Both gatherings, I think, *E. brevipila*. I examined the whole and found the number of glandular hairs varied from many to very few, and one plant was eglandular."—BARTON. "One of the British forms of *E. campestris*. In this the corollas are conspicuous and show a tendency to elongate after flowering. I cannot agree that this is *E. brevipila*, but if I remember rightly, it is nearer to the Derbyshire plant than to my var. *neglecta*. The latter I now think is a glandular form of *E. nemorosa*, hitherto undescribed. I have not seen any British plant at all resembling *E. Tholeyrouiana* Gandoger, which is the most distinct and typical of the series of *E. campestris*."—BUCKNALL. "My specimens from Mountstewart are not at all like the specimens of *campestris* which I sent to Mr Bucknall. I do not think these plants have anything to do with *campestris*. Why not *brevipila* ? The Grey Abbey plants are different and may possibly come under *campestris*, but they are not much like the Derbyshire plant which I believe to be true *campestris*."—DRABBLE. "The Grey Abbey plant is glandular *nemorosa*, f. *compacta*."—LUMB.

E. nemorosa H. Mart., var. *ciliata* Drabble. Otterbield Island, Derwentwater, Cumberland, v.-c. 70, August 7, 1918.—W. H. PEAR-

SALL. "Near *E. nemorosa*, but scarcely hairy enough for var. *ciliata*; some of the specimens on the sheet being quite glabrous."—BUCKNALL. "A rather slender and flexuous form of *E. nemorosa*, perhaps too nearly glabrous to go under Dr Drabble's variety."—PUGSLEY. "Yes; *nemorosa*, var. *ciliata*."—DRABBLE and LUMB.

Euphrasia ——? [416]. Heath land, Gooderstone, Norfolk W., v.-c. 28, September 17, 1918.—F. ROBINSON. "Material poor; perhaps a slender form of *nemorosa*."—WHELDON. "Gathered late and in poor condition, but it appears to be a slender form of *E. nemorosa*, near var. *macilenta* Gremli, which is said to possess capsules exceeding the floral leaves and to simulate *E. gracilis*."—PUGSLEY. "Material poor; eglandular, very meagre clothing. Probably two plants: (a) spike very lax, capsule narrower and longer, often exceeding teeth; ? *nemorosa*. (b) spike with shorter internodes; ? weak *Kerneri*."—PEARSALL. "*E. Kerneri* ?; but is it worth while to attempt to name *Euphrasiae* unless they are in good condition and of suitable age? "—BUCKNALL. "My specimen is certainly neither *nemorosa* nor *gracilis*: it may be weak *Kerneri* as we at present name this plant."—DRABBLE. "*Kerneri*."—LUMB.

E. curta Wettst., var. *glabrescens* Wettst. [4447]. Simonsbath, Somerset S., v.-c. 5, August 24, 1918. Abundant at 1000 to 1200 ft. near Simonsbath where it ascends to 1150 ft. This agrees very well with some of my gatherings determined by Wettstein. Mr Bucknall thought it better placed under *E. nemorosa*, but that is a more lowland plant according to my experience. It varies much and the same may be said of *E. curta*, type.—E. S. MARSHALL. "I cannot see *E. curta* in this plant. It seems rather to be a slender form of *E. nemorosa*, near var. *macilenta* Gremli."—PUGSLEY. "I think Mr Marshall is right in placing this as *curta*, var. *glabrescens*." —DRABBLE. "*E. nemorosa*, var. *ciliata* with rather large flowers." —LUMB.

E. occidentalis Wettst. Short turf in sandy ground, Holywell, Cornwall W., v.-c. 1, August 24, 1918.—F. RILSTONE. "Correct." —BUCKNALL. "Yes, but much less robust than usual."—MARSHALL. "The foliage and calyx of some of these plants are practically glabrous, while in others they are clothed with numerous stout bristles. In all of them the glands are extremely few. They all appear however to belong to one species and are, I think, rightly named."—PUGSLEY. "I agree; in my specimens I found plenty of short glandular hairs."—PEARSALL and LUMB. "Yes; but small and very sparsely glandular; not at all typical."—DRABBLE.

E. minima Jacq. [4440]. Simonsbath, Somerset S., v.-c. 5, from 1200 to 1480 ft., August 23, 1918. It descends to 800 ft. near

Withypool. Very variable in size, habit, leaf-cutting and shade of yellow (from creamy to golden, and occasionally orange). The average of this gathering is especially fine.—E. S. MARSHALL. Also [4443] in two stations near Withypool, Somerset S., v.-c. 5, at 850 and 1200 ft., August 15, 1918. Smaller than the last and more slender as a rule. Some of the flowers had a reddish tinge.—E. S. MARSHALL. "These two gatherings show good examples of this interesting plant. Although referred to *E. minima* Jacquin on the authority of the monographer Wettstein, I think the identification is erroneous. *E. minima* is a species that I have repeatedly gathered in the calcareous and granitic Alps of Switzerland, where it is often abundant at an altitude of 5000-7000 ft. It differs essentially from this Exmoor plant by its simple or slightly branched stem, by its broader and usually much more obtuse leaves, and by the two lips of the corolla being subequal, as in *E. scotica* Wettst. The affinities of our much branched form seem to me to lie with *E. gracilis* and *E. nemorosa*, and I see nothing to connect it with the true *E. minima* except the yellow colour of its corolla and its emarginate capsule. I hope to deal more fully with this plant in the *Journal of Botany*."—PUGSLEY. "Having now seen Mr Pugsley's remarks on the Exmoor plant, I entirely agree that it is distinct from the Continental *E. minima*, although when I received small, nearly simple specimens from Mr Hiern at the time of its discovery I thought they were near enough to be included with it. Mr Marshall's fine gatherings are clearly distinct from plants from other British localities, which I can only refer to *E. minima*, excluding my var. *arbuscula*, which I now think should rank as a species."—BUCKNALL. "I do not really understand *minima* at present. I find no suggestion of *gracilis* or *nemorosa*, however. I am fully in agreement with Mr Bucknall in his conclusion that *arbuscula* has nothing to do with *minima*."—DRABBLE. "I still think they come well within the range of *minima*."—PEARSALL. "Good *minima*."—LUMB. See *Journ. Bot.* 169-173, 1919, where Mr Pugsley describes this plant as *Euphrasia confusa*, sp. nov.

E. Rostkoriana Hayne. Near Sedbergh, Yorks NW., 300 ft., v.-c. 65, September 23, 1918.—A. WILSON. "Yes, but in almost all the specimens of this gathering the main axis was damaged."—BARTON. "Correct."—BUCKNALL, PUGSLEY, MARSHALL, LUMB and DRABBLE.

E. Rostkoriana Hayne. [4433]. Simonsbath, Somerset S., 1000 ft., v.-c. 5, August 27, 1918. Ascends to 1400 ft. Capsules truncate or with a shallow notch. Leaves and bracts broad. Mr Bucknall considered this typical, but one plant on the sheet sent to him was referred to *E. fennica*, so there may be some mixture.—E. S. MARSHALL. "Correct."—BUCKNALL, PEARSALL, BARTON, LUMB and DRABBLE. "This appears to differ from [4427] and [4428] only in its capsules being in some cases less emarginate and in its rather stronger growth."—PUGSLEY.

Euphrasia ——? [415]. Heath land, Gooderstone, Norfolk W., v.-c. 28, September 17, 1918.—F. ROBINSON. "I think this is our ordinary *E. Rostkoviana* with long drawn out flowering stems and gathered late."—PUGSLEY. "*E. Rostkoviana.*"—MARSHALL, BARTON and PEARSALL. "Very good *Rostkoviana*; rather small-flowered."—DRABBLE.

Euphrasia ——? [405]. Heath land, Scaning, Norfolk E., v.-c. 27, August 5, 1918.—F. ROBINSON. "*E. Rostkoviana* Hayne, probably modified by growing on dry ground."—BUCKNALL. "*E. Rostkoviana.*"—PUGSLEY, MARSHALL, PEARSALL, BARTON, and DRABBLE.

E. fennica Kihlman. [4428]. Near Simonsbath, Somerset S., v.-c. 5, at 1000 to 1200 ft., August 24, 1918. Mr Bucknall confirms the name. Differs from *E. Rostkoviana* by its deeply notched capsules which frequently exceed the sepals, its less branching and usually more slender stem, and narrower leaves. Also [4427] same locality. Confirmed by Mr Bucknall. Quite like the last, but larger on an average. —E. S. MARSHALL. "Both of these gatherings seem to be small-flowered slender forms of *E. Rostkoviana*, with capsules more deeply notched than usual. They are less distinct than the somewhat similar form collected by Mr Barton near Lynmouth in 1917 and referred to *E. fennica* Kihlman. I have not seen authentic *E. fennica*, but I possess good Finnish material sent out as *E. hirtella*, var. *fennica* (Kihlm.) which is probably the same plant. This is of stiff erect growth, with long internodes below and erect branches about the middle of the stem. Its leaves are narrower and more acutely toothed than in the British forms of *E. Rostkoviana*, and its capsules longer, narrowed above and nearly truncate. I think all the Exmoor forms that I have seen are variants of British *E. Rostkoviana* rather than of this Finnish plant which seems to approach *E. hirtella* Jord." —PUGSLEY. (Later): "Since writing the above I have seen an authentic sheet of Kihlman's *E. fennica* at Kew. It is identical with my Finnish material and is labelled by Kihlman '*E. hirtella* Jord., var. *fennica* Lind. f. (= *E. fennica* Kihl.).' Neither of these Simonsbath plants nor that collected by Mr Barton in 1917 seems to me referable to Kihlman's plant."—PUGSLEY. "After examining Kihlman's authentic specimens at Kew I quite agree with Mr Pugsley in rejecting the name *E. fennica* for these plants and for my [277] of last year. My first impression I believe was correct, that the Lynmouth plant belongs to *E. Rostkoviana*, though it is perhaps distinct enough from type to warrant a name. In view of some emphasis laid this year on the deeply-notched capsule it may be noted that in

Kihlman's specimens the capsule is truncate."—BARTON. "This agrees with Mr Druce's specimens which were accepted by Wettstein as *E. fennica*, but Mr Pugsley, having compared it with authentic Finnish specimens, is probably right in rejecting that name for the Exmoor plant. I have seen this small-flowered form from other localities with simple stems or with one or two short branches near the base, while Mr Pugsley states that the Finnish plant has branches at the middle. The British plants may be worthy of a varietal name, but are doubtless connected with *E. Rostkoviana* by intermediate forms."—BUCKNALL. "I should not hesitate to call these plants small-flowered *Rostkoviana*."—DRABBLE and LUMB. See *Journ. Bot.* 173-175, 1919.

E. Vigursii Davey. Downs near Perranporth, Cornwall W., v.-c. 1, August 16, 1918.—F. RILSTONE. "Correct."—BUCKNALL. "Yes, quite typical."—MARSHALL. "This is no doubt correctly named; but a few of the specimens, which are relatively coarse in habit with much ampler foliage, seem indistinguishable from *E. Rostkoviana* except for the purple corolla. It does not appear to have been noticed that the ordinary form of *E. Vigursii* closely resembles *E. campestris* Jord. as represented by Jordan's specimens in *Herb. Brit. Mus.* and that it may be regarded as somewhat intermediate between this and ordinary British *E. Rostkoviana*."—PUGSLEY. "Yes, *Vigursii*; the bushy plants are rather curious, but I do not see any resemblance to *Rostkoviana*."—DRABBLE. "Yes."—LUMB.

E. Vigursii Davey (?). Newton Abbot, Devon S, v.-c. 3, September 27, 1918. Some of these plants are quite eglandular, as is frequently the case with this species. Coll. Miss E. M. PARKINSON: Comm. W. H. PEARSALL. "Not *E. Vigursii*. This is quite eglandular and the branching is different. Cf. *E. curta*, var. *glabrescens*."—BUCKNALL. "Not *E. Vigursii*. The material is mostly fragmentary but it looks like a slender form of *nemorosa*."—PUGSLEY. "Cannot be that as there are no stalked glands, and the habit is quite different. Poor material; it may be *E. curta*, var. *glabrescens*, or perhaps *E. nemorosa*."—MARSHALL. "Certainly not *Vigursii*: it seems to be *curta*, var. *glabrescens*."—DRABBLE. "Glandular *nemorosa*, var. *ciliata*."—LUMB.

E. Kerneri Wettst. In grass at the entrance to the big chalkpit above the Folkestone Warren, off the Dover road, Kent E. v.-c. 15, October 8, 1918. Very conspicuous for its large and beautiful white flowers, rendering it observable at some distance.—J. C. MELVILL. "I agree."—PUGSLEY, PEARSALL, BARTON, LUMB and DRABBLE.

E. Kerneri Wettst. On limestone, Arnside, Westmorland, v.-c. 69a, July 12, 1918. Coll. J. R. CUCKNEY: comm. W. H. PEARSALL.

"Correct I believe."—BUCKNALL. "I think correct for the most part, although some of the specimens show remarkably small flowers. One or two examples however are *E. nemorosa.*"—PUGSLEY. "The corolla tube shows no evidence of lengthening after anthesis on my specimens, and the flower is only 5 mm. long. Bucknall says 10-15 mm. long in his Key, and Babington puts *Kerneri* in group *Grandiflorae.* According to description *E. Kerneri* should be branched below the middle; these are branched throughout and one example has three branches bearing secondary branches. I consider it a form of *E. nemorosa*, var. *ciliata* Drabble."—WHELDON. "All my specimens are *nemorosa* var. *ciliata*; there is not the faintest resemblance to *Kerneri.*"—DRABBLE. "*Kerneri.*"—LUMB.

E. Kerneri Wettst. (?) simulating *E. minima.* Wet slopes on siliceous rocks, E. side of Derwentwater, Cumberland, v.-c. 70, August 14, 1918.—W. H. PEARSALL. "Why not *E. minima*? Corolla 4-5 mm. long, with yellow lower lip. Some of the fruits exceed the calyx, others do not. If not *E. minima* it is probably a *minima* hybrid."—WHELDON. "I think this is probably a dwarf form of *E. Kerneri*, and cannot see in it anything more than a superficial resemblance to the Exmoor *E. minima.*"—PUGSLEY. "I agree with Mr Pugsley."—BARTON and BUCKNALL. "Dwarf *Kerneri.*—DRABBLE. "Correctly named, most interesting."—LUMB.

Rhinanthus stenophyllus Schur. Downs near Storrington, Sussex W., v.-c. 13, June 28, 1918. The Rev. E. S. Marshall agrees with the name given.—C. S. SALMON. "Yes."—DRUCE.

R. stenophyllus Schur. [388]. Dry bank of old gravel-pit, Ovington, Norfolk W., v.-c. 28, June 12, 1918.—F. ROBINSON. "I think not, but rather *R. minor* Ehrh."—SALMON. "One of my gatherings of *R. Crista-galli* from a wet meadow near Mildenhall, Suffolk, consists of tall plants with intercalary branches like these, and the leaves vary from as narrow to twice as broad. Soil would account for the less luxuriant growth of Mr Robinson's plants which I have no hesitation in putting to *R. Crista-galli.* The presence of intercalary branches is not of itself evidence of *stenophyllus.*"—BARTON. "Perhaps best under *Crista-galli*, although in some points it approaches *stenophyllus.*"—DRUCE.

Melampyrum pratense L., var. *vulgatum* Pers., subvar. *digitatum* Beauv. [R. 7198]. Wellington College, Berks., v.-c. 22, July 1918. *Melampyrum pratense* L., subsp. *vulgatum* (Pers.), subvar. *digitatum*, forma *ovatum* (Spenn.) Beauverd. The cumbersome name rivals pre-Linnean cognomens and I should be content to call it *M. pratense* L., var. *digitatum* Beauv. The cutting of the upper bracts is striking. To this I should also refer the plants [R. 7192] from Perry Wood, Oxon, v.-c. 23, August 1918. See *Report* 45, 1917.—G. C. DRUCE.

M. pratense L., var. *hians* Druce. Llanrwst, Carnarvon, v.-c. 49, in immense quantity, July 1918. *M. pratense* L., *subsp. vulgatum* (Pers.), var. *hians* Beauverd. (*Report* 48, 1917). Covering large areas and affording a mass of colour from its showy rich orange-coloured flowers.—G. C. DRUCE.

M. pratense L., var. *latifolium* Schueb. & Mart. [109]. Wood, Watton, Norfolk W., v.-c. 28, August 11, 1918.—F. ROBINSON. " No; *latifolium* Schueb. & Mart. is not known as British. (See *Report* 44, 1917). This is subvar. *laurifolium* Beauv. of var. *vulgatum* (Pers.)." —DRUCE. " I do not think my specimen is var. *latifolium* auct. Brit. (= *laurifolium* Beauv.) as the lower leaves are too narrow and certainly not ovate-lanceolate as they should be. Some of the broader leaves on my example look diseased or distorted in some way."—SALMON. " The usual form of the species found in the woods by the lower Wye in Gloster and Monmouth."—RIDDELSDELL.

Utricularia intermedia Hayne. [389]. Marsh, Foulden Common, Norfolk W., v.-c. 28, June 13, 1918. Also [390] marsh, Roydon Common, v.-c. 28, June 18, 1918. I have never seen this plant in flower.—F. ROBINSON with F. C. NEWTON. " Yes; and it removes the ? after Norfolk W. in *Top Bot.*"—DRUCE. " Certainly."—SALMON.

Mentha rotundifolia, var. *Bauhini*. [413]. Cult. Watton, August 23, 1918.—F. ROBINSON. " This comes from Hildringham, the original station where Mr Long discovered it. (See *Report* 382, 1892). Mr Arthur Bennett only said it was near *M. Bauhini* Tenore. I am doubtful of its identity with the South Italian plant. Neither Rouy nor Archangeli include *Bauhini* in their Floras. I omitted it from the *Brit. Pl. List*. I will endeavour to obtain M. Briquet's opinion."—DRUCE.

M. citrata Ehrh. Origin Northaw, Herts., H. Peirson; cult. Ventnor, 1917, E. W. Hunnybun; hort. Ledbury, September 20, 1918. See *Report* 155, 1914. When sending this in 1917 the late Mr Hunnybun wrote: " With me it has become similar in every respect, except leaves being more cordate in shape, with the plant described by Mr J. W. White in *Journ. Bot.* 1906."—S. H. BICKHAM. " These beautiful specimens from the Northaw Mint are very acceptable. I put it as *M. piperita*, var. *citrata* (Ehrh.)."—DRUCE.

M. aquatica × *arvensis* (= *M. sativa*), var. *rivalis* Wats. Dry ground, Ball Wood, Wrington, Somerset N., v.-c. 6, September 3, 1918.—IDA M. ROPER. "This I call *M. verticillata*, var. *subspicata* (Weihe). I believe the Abbé Strail so named similar specimens for me but I have not seen a type specimen."—DRUCE. "This seems to me rather nearer *paludosa* than *rivalis*, which, when typical, has the bracts scarcely smaller than the leaves right up to the summit of the inflorescence."—SALMON.

M. gracilis Sm., var. *cardiaca* Baker. Hort. Univ. Bristol, September 1918. These specimens agree with the figure in *E.B.*, with Baker's figure in *Journ. Bot.* 1865, and with a stem (believed to have been gathered by Sole himself) of Sole's "*Mentha gracilis*, Slender Mint, tab. xvi." It seems doubtful if this plant now exists in Britain in the truly wild state. Syme considered it to be an escape from cultivation in most, if not all, of the recorded stations.—J. W. WHITE.

Mentha ——? [R. 7623]. Llyn Coron, Anglesey, v.-c. 52, July 1918.—G. C. DRUCE. "Is not this *M. aquatica* × *arvensis* (= *sativa*) coming under *paludosa* (*i.e.* more on the *aquatica* side)?"—SALMON. "As an aggregate under *paludosa*."—DRUCE.

Calamintha Nepeta Savi. [1389]. Bank, Alphamstone, Essex N., v.-c. 19, August 8, 1918.—G. C. BROWN. "Yes, but most continental authorities agree in calling it *Satureia Nepeta* Scheele."—DRUCE.

Nepeta Glechoma Trev., forma *hirsuta* Benth. Rough field, Tickenham Hill, Somerset N., v.-c. 6, May 9, 1918. Corolla tube 11 mm. long, plant hispid pubescent.—IDA M. ROPER. "Mr W. B. Turrill is preparing a monograph on *Glechoma* and Miss Roper's plant among others, has been sent him. If retained in the genus *Nepeta* the trivial is *hederacea*, not *Glechoma*."—DRUCE.

Ballota ruderalis Sw. Chicken run, Woodhall Spa, Lincs., August 1918. Coll. Rev. F. ALSTON; comm. G. C. DRUCE. This seems to me always alien in Britain.—DRUCE.

Teucrium Scordium L. Braunton Burrows, Devon N., v.-c. 4, July 31, 1918. Among herbage this plant grows to normal height.—H. J. RIDDELSDELL.

Plantago major L., var. *agrestis* Fries. (fide E. G. Baker). Calne, Wilts N., v.-c. 7, September 2, 1915. Var. γ. *agrestis* foliis tenuibus flaccidis hirsutis, scapo filiformi stricto, spica ovato-oblonga, radice annua." *Nov. Fl. Suec.* 25, 1828.—W. C. BARTON.

P. major L., var. *brachystachya* Wallr. Grassy track, Leigh Woods, Bristol, Somerset N., v.-c. 6, August 7, 1918.—IDA M. ROPER.

" Yes; but *P. minima* DC. is hardly separable from this."—BAKER. " Wallroth's description runs: ' Var. ε. *brachystachya*. foliis ovatis parce dentatis trinerviis erectis flaccidis scapo gracili illa subaequanti, spica pauciflora ovato-oblonga ex flosculis laxe composita, operculo rotundo.' *Sched. Crit. Pl. Fl. Hal.* 62, 1822."—BARTON.

Littorella uniflora Aschers. (= *lacustris* L.). [392]. Edge of pools on heath, E. Winch, Norfolk W., v.-c. 28, June 18, 1918.—F. ROBINSON with F. C. NEWTON.

Herniaria glabra L. [417]. Land formerly cultivated, Swaffham, Norfolk W., v.-c. 28, September 21, 1918.—F. ROBINSON. " Yes; the differences between this rare annual or biennial and the perennial *H. ciliata* Bab. are set forth in *Journ. Bot.* 331-2, 1914." —PUGSLEY. " Yes; not included for Norfolk W. in *Top. Bot.*"—DRUCE.

Amaranthus retroflexus L. Amberley, Sussex W., v.-c. 13, September 20, 1918.—A. WEBSTER.

Chenopodium hybridum L. Marston, Oxford, v.-c. 23, September 1918. A rare plant in the county.—G. C. DRUCE.

C. urbicum L., var. *intermedium* Moq. [374]. Ship docks, King's Lynn, Norfolk W., v.-c. 28, August 1917.—F. ROBINSON. " No; the outline of the leaf is not triangular, the spikes are leafy, and the seeds small and mostly vertical, *C. rubrum* L. It corresponds fairly well with the drawing of var. *blitoides* in *Camb. Brit. Flora*, but is rather towards var. *vulgare* in leaf and inflorescence. I think it should go to *C. rubrum*, var. *blitoides* which Dr Moss remarks is liable to confusion with *C. urbicum*, var. *intermedium*."—BARTON. " This is clearly not an *urbicum* form by its perianth, seeds, &c. Coming under *rubrum*, it may well be var. *blitoides*."—SALMON.

C. opulifolium × *album*. [419]. Cultivated land, Watton, Norfolk W., v.-c. 28, September 10, 1918. This plant grows abundantly with both parents and is now much the commonest of the three. —F. ROBINSON. " I see no evidence of hybridity; only *opulifolium*, and Dr Thellung agrees.—DRUCE. " My specimen looks like a hybrid. It would be interesting if Mr Robinson would send a further supply next year with both parents."—BARTON.

C. album L., var. Waste ground, Bradford, v.-c. 64, August 28, 1918.—J. CRYER. " This must, I think, go to *C. striatum*, but it is immature."—DRUCE.

C. leptophyllum Nutt. Waste ground, Bradford, v.-c. 64, September 4, 1918.—J. CRYER.

C. glaucum L. Byfleet, Surrey, v.-c. 17, August 1918.—G. C. Druce and Lady Davy.

C. polyspermum L., var. *spicatum* Moq. (= *acutifolium* Sm.). Peat cutting, Shapwick, Somerset N., v.-c. 6, August 8, 1918.—Ida M. Roper.

C. hircinum Schrad. var. ? Waste ground, Bradford, v.-c. 64, August 28, 1918 Similar but much smaller leaves than type, and not so distinctly three-lobed or attenuated as var. *subtrilobum* Issl.—J. Cryer. " Yes *hircinum*, but not quite the var. *subtrilobum* of Issler."—Druce.

Chenopodium —— ? Waste ground, Bradford, v.-c. 64, August 28, 1918.—J. Cryer. " This is probably *C. paniculatum* Hook., which has been found adventive at Galashiels, a wool alien from South America. See *Adventive Flora of Tweedside*, 193."—Druce.

Polygonum dumetorum L. Deerleap Wood, Wootton, Surrey, v.-c. 17, September 6, 1917. Apparently a new station for this local and uncertain species. Mr A. H. Evans could not see anything of it here in 1918, but it will no doubt recur later.—C. E. Salmon.

P. Persicaria L. N. Mundham, Sussex W., v.-c. 13, October 11, 1918. Ochreae fringed, peduncle slightly glandular, styles united half-way, flowers pure white, nut bluntly trigonous, dark brownish-black, shining.—J. E. Little. " In my example the glands are extremely rare and require searching for. In other examples of *Persicaria* in my herbarium I see them, in spite of book-characters! This white-flowered form is surely rare? According to *Camb. Brit. Fl.* our common plant is *P. Persicaria*, var. *agreste* Meissner, under which this N. Mundham plant would come."—Salmon. " *P. Persicaria* L., f. *albiflora*."—Druce.

P. minus Huds. [418]. Wet place on common land, E. Winch, Norfolk W., v.-c. 28, September 21, 1918.—F. Robinson. " Yes, the var. *subcontiguum* Wallich, which is in my experience the commoner form of it in Britain."—Salmon. " The seeds are larger than in my Abingdon specimen. I suppose it is the *dubium* as named for me by Dr Moss which is called var. *elatum* in *Camb. Brit. Fl.*, but surely in error since *interruptum* Meissner of 1832 has precedence over *elatum* Fries of 1839, and it stands correctly in *Fl. Fr.* as var. *interruptum* (of *minus*) Rouy. Meissner made it a variety of *P. strictum*."—Druce.

P. aviculare L., var. *arenastrum* (Bor.). Sea coast, Ballwater, Co. Down, August 1918.—C. H. Waddell. " This is the *P. aequale* Lindm."—Druce.

P. sachalinense F. Schmidt. Marston brickyard, Oxford, v.-c. 23, September 1918. Quite naturalised there; almost certainly derived from the Botanic Garden.—G. C. Druce.

Viscum album L. Brockley Combe, Somerset N., v.-c. 6, February 23 and May 28, 1918. Parasitic on *Pyrus Aria*.—Ida M. Roper. "Acceptable specimens with the unusual host *P. Aria*."—Druce.

Euphorbia Cyparissias L. Churn Downs, Berks., v.-c. 22, July 1918.—G. C. Druce.

Ulmus nitens Moench × ——? Nine Springs, Hitchin, Herts, v.-c. 20, March 9 and September 5, 1918. Of fifty flowers examined 5 had 4 stamens, 30 had 5 stamens, and 15 had 6 stamens. Extremities of branches finer than in *U. glabra* Huds., rather whiplike and drooping. *Branchlets*: summer shoots hairy; one year old shoots hairy or not, with no marked evidence of striation. The trunk has been lopped below but the crown was fairly large. *Leaves* up to 3½ in. × 2 in. *Petioles* pubescent short not exceeding ¼ in. *Laminae*: spring leaves glabrescent above becoming smooth and shining; summer leaves shortly hairy above, pubescent below; all narrower and more acute than in *U. campestris*. No samaras produced in 1918.—J. E. Little. "This is probably a hybrid as it is not exactly *U. nitens*." —Henry. "Dr Williams shows that *nitens* is an untenable name, being antedated by *U. carpinifolia* of Borckhausen Rheinn. Mag. i., 198, 1793, and therefore the numerous comb. nov. of the *Camb. Brit. Fl.* may be again renamed."—Druce.

× *U. vegeta* Schneider. (The Huntingdon Elm). Clifton Down, Gloster W., v.-c. 34, February, March, and August 1918.—Ida M. Roper. "Yes."—Henry.

Salix triandra × *viminalis* (*S. lanceolata* Sm.). ♀. Lane near Chertsey, Surrey, v.-c. 17, May 14, 1916.—A. B. Jackson and J. Fraser.

Populus alba L. Burpham, Sussex W., v.-c. 13, July 1918. Large trees by the Arun.—G. C. Druce. "Yes."—Henry.

P. tremula L. Churn, Berks., June 1918.—G. C. Druce. "*P. canescens* Sm."—Jackson and Barton. "A form of *Populus canescens*."—Henry.

Helleborine viridiflora Wh. & Tr. Sandhills, Formby, July 27, and Hightown, Lancs. S., v.-c. 59, July 27, 1918.—W. G. Travis.

× *Tritonia crocosmiflora* Nicholson (*T. aurea* × *Pottsii*) = *Monbretia crocosmiaeflora* André. [4457]. Well established by the R. Barle at intervals for about three miles below Simonsbath, Somerset S., v.-c. 5, August 24, 1918. Flowers of a more vivid scarlet when fresh than is usual in the garden plant; but the colour is partly lost in drying. Leaves were found by Lady Davy, June 1916. I owe the synonymy to Mr A. J. Wilmott. Undoubtedly seeded down, not planted. It seems strange that an artificial hybrid should be so fully fertile.—E. S. MARSHALL.

Allium carinatum L. Tay-side, near Perth, Mid Perth, v.-c. 88, August 1918.—G. C. DRUCE.

Scilla autumnalis L. South cliffs of Guernsey, September 1913. —C. V. B. MARQUAND.

Juncus acutus L. Vazon Bay, Guernsey, September 1912.—C. V. B. MARQUAND.

J. bufonius L., var. *ranarius* (Song. & Perrier). Damp sandy lane. Formby, Lancs. S., v.-c. 59, July 27, 1918.—W. G. TRAVIS. " Only stunted forms of *J. bufonius* I think. In 1917 I examined some hundreds of plants growing on Countisbury Common, N. Devon at 1000 ft., and found on the bare ground of the narrow paths small plants indistinguishable from these (many even more tufted and with the perianth segments shorter in comparison with the capsule), while under the grass at the edge of the paths was typical *J. bufonius* though not exceeding a few inches in height; and between these extremes occurred a complete series of intermediates, the form of which was evidently determined by the situation. Study of these plants in different localities for several seasons has convinced me that all our British plants hitherto put to *J. ranarius* are forms of *J. bufonius*, and that Prof Graebner was wrong in identifying our plant of the exposed coast (*New Phyt.* x., 321 and 327; *Report* 129, 1911) and from sandy golf links (*Report* 190, 1912) with the true *J. ranarius*. Perrier's own specimens in *Herb. Brit. Mus.* and at Kew are very different; they are about 4-5 inches high and neither stunted nor densely tufted. The original description runs as follows: *Juncus ranarius* Song. & Perrier ap. Billot Annot. 192, 1859, non Nees. J. radice fibrosa, culmis sterilibus nullis, eorum loco fasciculis foliorum floriferis 1-2 foliatis, floribus solitariis subfasciculatisve; perigonii laciniis anguste lanceolatis; exterioribus capsulam aequantibus, interioribus illa paulo brevioribus; capsula oblonga, basi subattenuata, apice obtusa; seminibus laevibus ovoideo-globulosis. Le *J. ranarius* differt nettement du *J. bufonius* et des espèces voisines par les divisions extérieures du périgone égalant ou dépassant à peine la capsule et les intérieures plus courtes qu'elle. Outre les caractères précédents il se distingue encore par sa capsule plus allongée, presque une fois plus grosse et sa floraison plus précoce d'une quinzaine de jours. The description in *Report* 35, 1911, lines 12-17, covers the Southport and Pyrford plants and these of Mr Travis, but does not correspond with the German text quoted on the same page which shows that *J. ranarius* should have the *inner* perianth segments somewhat *shorter*, the outer as long as or somewhat longer than the capsule; and the capsule distinctly narrowed at bottom. Hayward's *Pocket Book*, 1914 ed., p. 274, should be corrected in the same sense. It may be noted that Rouy gives *J. ranarius* Song. & Perrier as a synonym of *J. ambiguus* Gus., but alters Gussone's description 'calycinis foliolis tribus exterioribus acutis capsulam oblongam acutam aequantibus' to 'capsule peu exserte dépassant les divisions internes ou les égalant, plus courte que les divisions externes.' "—BARTON.

Potamogeton zosterifolius Schum. Plentiful in Cromford canal, near Matlock, Derby, v.-c. 57, July 17, 1884.—C. BAILEY. "Yes, correct; the leaves are longer and not so obtuse as in Schumacher's type specimens."—BENNETT.

P. acutifolius Link. Peppering, Burpham, Sussex W., v.-c. 13, June 28, 1918.—R. J. BURDON. "A new Sussex station, I believe, though found by Borrer at Amberley, a few miles away. A scarce plant in the whole county."—SALMON.

P. pusillus L., var. [403]. Ditch, Scoulton, Norfolk W., v.-c. 28, August 1, 1918. Mr Bennett says this is a variety, but without naming it.—F. ROBINSON. "Not *P. trichoides*, but *P. pusillus* L." —BENNETT.

[*Potamogeton panormitanus* Biv.-Bern. *P. gracilis* Fries, teste Hagström. *P. Noltei* Ar. Bennett. This plant long put under *pusillus* as a variety (*Journ. Bot.* 1881); although Reichenbach adopts the species ('species videtur distincta') Hagström *Critical Researches in Potamogeton* 99, 1916, and Italian botanists generally made it only a synonym of *pusillus*. The whole of the British specimens named *pusillus* will need to be critically examined to see under which they shall be placed.—Ar. BENNETT (March 1, 1919.).]

P. rutilus Wolfg. Llyn Coron, Anglesey, v.-c. 52, July 1918.—G. C. DRUCE and Mrs WEDGWOOD. These are the first specimens of this species distributed in Britain: the previous records for all other counties being erroneous. It occurs in small quantity and was first discovered by Mr J. A. Griffith in 1892. This made my fifth visit to the locality, as in 1917 the weather proved too stormy for boat-dredging. This year Mrs Wedgwood and I were more fortunate.—G. C. DRUCE.

Naias marina L. [414]. Edge of lake, Hickling Broad, Norfolk, v.-c. 27, August 30, 1918. Confined, so far as I saw, to a very restricted area.—F. ROBINSON.

Cyperus longus L. [420]. Apesdown, Wight, v.-c. 10, October 15, 1918. Coll. D. M. HEATH; comm. F. ROBINSON. Also from Torteval, Guernsey, September 1913.—C. V. B. MARQUAND.

Cyperus ——? Waste ground, Bradford, v.-c. 64, September 3. 1918. In abundance.—J. CRYER. "*Cyperus congestus* Vahl."—THELLUNG.

× *Scirpus carinatus* Sm. Arun-side, near Arundel, Sussex W., v.-c. 13, July 1918. With *triqueter* but no *lacustris*. Is this an instance like *Spartina Townsendi* in which one of the assumed parents has decreased or entirely disappeared? I have a strong suspicion that, if a hybrid, its second parent is *S. Tabernaemontani* which I saw growing near North Stoke.—G. C. DRUCE.

S. Holoschoenus L. Braunton Burrows, Devon N., v.-c. 4, July 31, 1918—H. J. RIDDELSDELL.

Eriophorum vaginatum L., var. [391]. Marshy heath, Roydon Common, Norfolk W., v.-c. 28, June 18, 1918. I send this first because it is a great rarity in Norfolk and secondly because I have never seen a form with such long leaves before.—F. ROBINSON. "Just *vaginatum*, it seems to me, with rather luxuriant foliage."—SALMON. "I have gathered specimens exactly corresponding near Arthog, v.-c. 48, in company with shorter-leaved forms; under type."—BARTON.

Rynchospora alba Vahl. Heysham Moss, v.-c. 60, August 6 1917.—J. CRYER.

Carex fulva Host. [393]. Marsh, Saham Toney, Norfolk W. v.-c. 28, June 24, 1918.—F. ROBINSON. "Yes, I saw it there last year with Mr Robinson."—DRUCE.

C. flava, var. *oedocarpa* × *fulva*. Sent from Great Bedwyn, Wilts N., v.-c. 7, by Mr C. P. Hurst in June 1918, with its putative parents.—G. C. DRUCE. "I should have thought this would be *C. fulva* crossed with *Oederi*, var. *oedocarpa* rather than any *flava* form."—SALMON. "Seems to be our commonest hybrid sedge, *C. fulva* × *Oederi*, *oedocarpa*. The second parent agrees better with *C. Oederi* than with *C. flava* or *lepidocarpa*, as the beak of the fruit is straight, not abruptly deflexed."—MARSHALL. "I use the name *flava* in an aggregate sense, keeping under it var. *oedocarpa*. *C. Oederi* is, I think, a distinct species from *flava* or *lepidocarpa*, distinguished by its small perigynia, 2-3 mm. long, with very short, straight, abruptly contracted beak. *C. flava*, var. *oedocarpa* I make synonymous with var. *minor* Towns. The smallness of the perigynia seems to be a more reliable character than the direction of the beak, which is not always deflexed in *flava* (there is a var. *rectirostra*). I doubt if true *Oederi* is found in the Kennet valley."—DRUCE.

C. ornithopoda Willd. Fell End Clouds, Wild Boar Fell, Westmoreland, v.-c. 69, Scar limestone, 1450 ft., July 13, 1918. I regret this was gathered too late to produce good specimens, the perigynia having mostly shed.—A. WILSON.

C. humilis Leyss. Origin Clifton Down, hort. Reigate, May 1918. A small scrap of a root was accidentally brought home with another plant in 1907, and it has increased to a large clump in the rockery, thriving well on Upper Greensand stone.—C. E. SALMON.

C. montana L. Near Bracknell, Berks, v.-c. 22, June 1918. On the heathy margins of a road where it was discovered by our member, Mr J. W. Higgens, in 1917. It extends also into the adjoining wood. A great proportion of it was barren. A capital addition to the county flora.—G. C. DRUCE.

Panicum Crus-Galli L. Yiewsley, Middlesex, v.-c. 21, September 16, 1918.—A. WEBSTER. "Yes."—DRUCE.

P. Ischaemum Schreber. Near Pyrford, Surrey, v.-c. 17, October 1918.—Lady DAVY and G. C. DRUCE. This name antedates *P. glabrum*, &c. In a fallow field and among potatoes in countless numbers, the plants mostly prostrate.—DRUCE.

Setaria viridis Beauv., var. *majus* Gaud. On refuse near the Frome at Eastville, Bristol, September 29, 1916.—J. W. WHITE. *S. germanica* P. B. Refuse tip, same locality and date.—J. W. WHITE. "I call it *S. italica* Beauv."—DRUCE. "The var. *majus* Gaudin is a mere nutrition form. Kornicke, *Handbuch des Getreidebaues*, i., 278, says he has raised Gaudin's *majus* from seed of ordinary *S. viridis*. *S. italica* is the cultivated cereal, distinguished from *S. viridis* by the persistent fruit; in good soil the panicle is large and branched, but when starved it approaches *S. viridis* in appearance; and var. *germanica* is merely a reduced state of *S. italica* of no varietal value. Both *S. viridis*, the wild plant, and *S. italica*, the cultivated one may have awns wanting or of different lengths, and green or violet in colour. Kornicke gives a long list of races or forms based on these differences in almost all possible combinations. Dr Stapf considers both Mr White's plants come under *S. italica*. The name *majus* Gaudin should disappear from our lists."—BARTON.

S. glauca Beauv. Waste ground, Bradford, v.-c. 64, September 3, 1918.—J. CRYER.

Phalaris minor Retz. In greenhouses in the north of Guernsey, August 1913.—C. V. B. MARQUAND. Also from waste ground, Bradford, v.-c. 64, June 28, 1918.—J. CRYER. Also a small-spiked form from low lying tracts in the north of Guernsey, September 1913.—C. V. B. MARQUAND. "This is the form which I sent to the Club in 1912 (*Report* 294) and submitted to Prof. Hackel later. It is 'No. 3, an intermediate state' (*i.e.* between type and a starved state) of his reply, see *Report* 516, 1913. I send a few examples of my gathering for comparison."—BARTON.

Phleum phleoides Simonkai (= *Boehmeri* Wibel). [395]. Dry heath on chalk, Swaffham, Norfolk W., v.-c. 28, July 11, 1918. Also [399] heathland in gorse, Barnham Common, v.-c. 28, July 18, 1918. I have never seen this long-leaved form before; it was growing in thick gorse.—F. ROBINSON.

Polypogon monspeliensis Desf. Waste ground, Bradford, v.-c. 64, July 11, 1918.—J. CRYER. "Yes."—DRUCE.

Calamagrostis epigeios Roth. [1390]. Ditch, Layer-de-la-Haye, Essex N., v.-c. 19, August 11, 1918. A plant I have hitherto overlooked near Colchester It is one of our most familiar species in the ditches of Belgium.—G. C. BROWN.

Deyeuxia neglecta Kunth, var. *Hookeri* (Syme). Near Watton, Norfolk W., v.-c. 28, July 1918, where it was discovered by Mr Robinson; a remarkable extension of its area.—G. C. DRUCE.

Deschampsia alpina R. & S. Lochnagar, Aberdeen S., v.-c. 92, August 1918. In great luxuriance and beauty. Seen also in the shoulder of Ben Nevis at about 4000 ft.—G. C. DRUCE.

Avena strigosa Schreber. [349]. Stubble field, Pitts Hill, near Petworth, Sussex W., v.-c. 13, September 2, 1918.—W. C. BARTON. "Yes; the reddish-black awns are a conspicuous feature in the field."—DRUCE.

Cynosurus echinatus L. Waste ground, Bradford, v.-c. 64, June 28, 1918.—J. CRYER. "Yes."—DRUCE.

Koehleria gracilis Pers., subsp. *britannica* Domin. [353]. Railway bank, Mildenhall, Suffolk W., v.-c. 26, June 6, 1916. The flat lower leaves seem to put all these under *K. gracilis* (though in some plants a number of the leaves are rolled). The largest specimens [353 A] correspond closely to the description of *britannica* (*Journ. Bot.* 576, 1905; *Report* 144, 1905); the smaller densely caespitose forms [353 B & C] are perhaps nearer to *gracilis* type, except that they vary in the amount of pubescence below the panicle and on the rachis. In the case of the specimens labelled [353 C] this is small, and these might perhaps go to type. Dr Domin appears to reject hairiness of keel of flowering glumes as a diagnostic character. The distance between the upper leaf and panicle varies greatly. All plants were growing close together under exactly the same conditions, but the forms A, B, C, were in homogeneous clumps.—W. C. Barton. "Yes; as Dr Domin admits, the *Koehlerias* are very plastic and *britannica* deserves no higher than varietal grade."—Druce.

Poa pratensis L., var. [R. 1774]. Holywell, Oxford, v.-c. 23, June 1918. A broad-leaved form, ? var. *anceps* Gaudin.—G. C. Druce.

P. pratensis L., var. [R. 1611]. Weston-on-the-green, Oxford v.-c. 23, June 1, 1918.—G. C. Druce.

P. nemoralis L. Bagley Wood, Berks, v.-c. 22, June 1918.—G. C. Druce.

P. nemoralis L., var. ? Plantation near Bingley, v.-c. 64, June 23, 1918. Spikelets 1-2 flowered, stem and panicle slender, probably var. *angustifolia* (Parn.).—J. Cryer. "This is perhaps var. *angustifolia* Parnell; the spikelets seem almost uniformly 1-flowered. But is *angustifolia* of higher rank than a form?"—Salmon.

P. compressa L., forma. Limestone walls, Clifton, July 18, 1918. —J. W. White.

P. compressa L., var. *polynoda* (Parnell). Top of a garden wall, Saddlehouses, Braddon, Isle of Man, v.-c. 71, June 1918. Coll. G. A. Holt.; comm. C. Bailey. Spikelets of 4-5 free florets, lower pale with three broad hairy veins and two slender intermediate ones. *Poa compressa*, *β. polynoda* Asch. & Graebn.; *Poa polynoda* Parnell.—C. Bailey. "*Poa compressa*, forma."—O. Stapf. "Not recorded for v.-c. 71 in *Top. Bot.*"—Druce.

Festuca gigantea Vill., var. *triflora* Koch. [351]. Edge of wood, Lodsworth, Sussex W., v.-c. 13, August 24, 1918. Growing with type and a few intermediates. The ± erect panicle makes the variety noticeable, but the plants showed a tendency to vary in this respect according to the number of spikelets and size of panicle; and possibly the weight of the spikelets may account for it. As to the number of flowers in each spikelet, I found 3 most frequent, and often on the same plant some spikelets with 2 or 4 flowers. The 'variety' may be a mere nutrition form, in which case it should not appear in our lists. Has it been tested from seed?—W. C. Barton.

F. elatior L., f. *pseudo-loliacea* Curt. [13]. Aylestone meadows, near Leicester, v.-c. 55, July 1918.—A. E. Wade. "× *F. adscendens* Retz. (= *F. loliacea* Curt.)."—Druce.

F. pratensis Huds. × *Lolium perenne* L. (*F. loliacea* Curt.). [394]. Farm premises, Watton, Norfolk W., v.-c. 28, July 8, 1918. —F. Robinson. "Yes; × *F. adscendens* Retz."—Druce.

F. ovina L., f. *hispidula* Koch. Douglas, Isle of Man, v.-c. 71, June 1918. Coll. G. A. Holt; comm. C. Bailey. "My specimen has not a complete rootstock, but one of the plants has a runner; hence I wonder if it is not *F. rubra*, var. *barbata*."—Druce.

F. uniglumis Soland. Littlehampton Golf Links, Sussex W., v.-c. 13, June 8, 1918.—R. J. Burdon. "Yes; it is not given in *Top. Bot.* for Sussex W., although in Arnold's *Flora* it is cited for Littlehampton. If the oldest trivial is retained the plant should be called *F. membranacea* (L.)."—Druce.

F. Myurus L. Waste ground, Bradford, v.-c. 64, June 11, 1918. In great abundance.—J. Cryer. "Yes; tall specimens."—Druce.

Festuca ——? [398]. Edge of pond, Merton, Norfolk W., v.-c. 28, July 14, 1918.—F. Robinson. "A form of *F. arundinacea* Schreb. with more shortly stalked spikelets, and approaching the var. *pauciflora* Hartm."—Druce.

Bromus unioloides H.B.K. Waste ground, Bradford, v.-c. 64, July 7, 1918.—J. Cryer. "Yes."—Druce.

B. hordeaceus L., var. *glabratus* Doell. Waste ground, Bradford, v.-c. 64, June 28, 1918.—J. Cryer. "Yes."—Druce.

B. hordeaceus L., var. *leptostachys* (Pers.). [R. 1610]. Weston, Oxford, v.-c. 23, June 1918. This is the small narrow-spikeletted form to which Persoon's name appears strictly to belong. The larger and coarser plant with glabrescent large spikelets I refer to var. *glabratus* Doell. The var. *leptostachys* is a frequent ingredient in seedcrops.—G. C. Druce.

Hordeum jubatum L. On rubbish tipped at Eastville, Bristol. September 19, 1918.—J. W. White. "Yes."—Druce.

Equisetum maximum Lam. Bathford Hill, Somerset N., v.-c. 6, April 18 and July 2, 1918. Grows on a dry open slope over a limited area.—Ida M. Roper.

E. limosum Willd., var. *verticillatum* Doell, subvar. *leptocladum* (Doell) R. & F. Ditches on sand dunes near Formby, Lancs. S., v.-c. 59, July 1917.—J. A. Wheldon. "This is an extreme form which I know well from Dorset and elsewhere, but I think only dependent on external conditions and hardly of varietal rank."—Marquand.

E. palustre L., var. *polystachyum*. Deeping St James, Lincs., September 1, 1918.—A. Webster.

Asplenium lanceolatum Huds., var. *obovatum* Gren. & Godr. [346]. Old wall, Countisbury, Devon N., v.-c. 4, August 28, 1917. —W. C. Barton.

A. Adiantum-nigrum L. [356]. To show variation in E. Lynn valley, Devon N., v.-c. 4, August 1917.—W. C. Barton.

Lastraea Filix-mas Presl, var. Grayfield Wood, Hallatrow, Somerset N., v.-c. 6, July 26, 1918. Frond 4 ft. long.—Ida M. Roper. "Yes: but it should be *Dryopteris Filix-mas* Schott approaching var. *affinis* Newman."—Druce.

L. aristata Rendle & Britten, forma. Origin, gravelpit, Hoe, Norfolk W., v.-c. 28; cult. Colchester, August 13, 1918. A very distinct form from the ordinary *L. aristata* differing in the much larger, stiffer, and more erect fronds with the tips of the pinnae incurved and in the curled pinnules. These features have remained constant in cultivation, though the fronds do not reach so large a size (nearly 4 ft.) as in the wild specimens.—G. C. Brown. "Yes; but Pteridologists following Christensen in *Index Fil.* are using the name *Dryopteris*. This is one of the many forms of *aristata*."—Druce.

Dryopteris cristata A. Gray. Near Watton, Norfolk W., v.-c. 28, July 1918.—G. C. Druce.

Phegopteris polypodioides Fée. Near Simonsbath (1300 ft.), Somerset S., v.-c. 5, September 2, 1918. Locally abundant, often large and rather variable, in one station. I have reason to believe that Lady Davy found it in 1916 about three miles south of this locality.—E. S. Marshall.

Nitella opaca Agardh. Pond on Yate Common, Gloster W., v.-c. 34, March 22, 1918.—J. W. WHITE. "Yes."—GROVES. Also "winter state with strongly mucronate branchlets," millstream near Harbertonford, Devon S., v.-c. 3, February 1918.—C. V. B. MARQUAND.

N. translucens Agardh. Hele Agar Marsh, Cornwall, W., v.-c. 1, March 14, 1918.—C. V. B. MARQUAND.

N. mucronate Miquel, var. *gracillima* Groves and Bullock-Webster in Journ. Bot. 323, 1917. Pond (old strontia pit) east of Rangeworthy, Gloster W., v.-c. 34, March 22, 1918.—J. W. WHITE. "The original plant I take it."—GROVES.

N. intricata Braun. (*N. glomerata* Chev. on labels by a slip ot memory). Twinstead, Essex N., v.-c. 19, June 1918. For the past twenty years I have constantly visited this piece of water but only *Glyceria* and a form of *Ranunculus heterophyllus* hitherto appeared. It was thoroughly cleared out about three years ago and in May 1918 the bare bottom was thickly covered with this Charad, which probably the Rev. A. Woodruffe-Peacock would say was duck-brought. May not the disturbance of the mud have led to the exposure of long-buried nucules? There is not a trace of it in the pond in 1919.—G. C. DRUCE. "*Tolypella intricata* Leonh."—GROVES.

Chara vulgaris L., forma *munda*. Pond near Lancresse, Guernsey, July 1913.—C. V. B. MARQUAND. "A very pretty little form of this unincrusted state of *C. vulgaris*."—GROVES.

C. fragifera Durieu. Pond near Land's End, Cornwall W., v.-c. 1, March 1918.—C. V. B. MARQUAND.

C. fragilis Desv., subsp. *delicatula* (Braun). Grande Mare, Guernsey, September 1913.—C. V. B. MARQUAND.

SEEDLINGS.

Contributed by Mr G. C. DRUCE :—

Chelidonium laciniatum Mill. Hort. Oxford, June 1918. Sent in order to show how perfectly the characters are transmitted. Out of many thousands I have seen not one showed a reversion to *C. majus*. *C. laciniatum* is a perfectly good species but its origin is obscure.

Geranium lucidum L. Boar's Hill, Berks., June 1910.

Tragopogon ——? Hort. Oxford, August 1918. These are seedings of the plant named *T. orientalis* L. by Dr Thellung; originally from Wolvercote, Oxford.

Contributed by Mr W. C. BARTON :—

Ranunculus repens L. *Fumaria officinalis* L. *Gnaphalium uliginosum* L. *Myosotis arvensis* Lam. *Lamium purpureum* L. *Chenopodium polyspermum* L. *Euphorbia Peplus* L. All from garden ground at Lodsworth, Sussex W., v.-c. 13, August 1918.

Trifolium dubium Sibth. Garden at Lodsworth, August 1918. " Occasionally this species produces quinquipartite, pinnate leaves. I found plants showing this peculiarity on Barry Island, Glamorgan, in 1906 and grew them in my garden at Aberdare, but I have never seen elsewhere or heard of this phenomenon. In the dried state it looks as if the extra pair of leaflets arose from the division of the terminal leaflet."—RIDDELSDELL.

Sonchus asper Hill. Garden at Lodsworth, August 1918. Older plants in the garden were all *S. asper*.

Galium Aparine L. Shrubbery at Epsom, Surrey, v.-c. 17, January 1, 1918.

Galinsoga parviflora Cav. Window boxes at 43 Rosary Gardens, S.W., August 1918.

Contributed by Mr A. E. WADE.

Capsella Bursa-Pastoris Medic. [18]. *Senecio vulgaris* L. [17]. *Urtica urens* L. [16]. All from Leicester, v.-c. 55, September 1918.

Contributed by Miss I. M. ROPER.

Spiraea Ulmaria L. Cotcutt Moor, Somerset N., v.-c. 6, June 17, 1918.

SEEDS.

Mr S. H. Bickham sent a good supply of seeds of *Scrophularia vernalis* L. and *Fritillaria Meleagris* L., forma *alba*.

CORRECTION ON *REPORT* 1916.

p. 574. *Hieracium Pilosella* L., var. *nigrescens* Fr. " My sheet is not var. *nigrescens*. I submitted it to Mr Marshall and he commented ' Not var. *nigrescens*, which is both pilose and glandular on the heads. Here they are densely glandular without any simple hairs. Though not dwarf it comes best under var. *concinnatum*.' "—BARTON.

7 NOV [illegible]

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Dr A. Thellung.
Dr J. von Sterneck.
Dr R. von Wettstein.

CORRESPONDING MEMBERS.

Arthur Bennett, A.L.S.
F. Arnold Lees, M.R.C.S.
Richard F. Towndrow, A.L.S.

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- Magnus Spence.
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- Rev. W. Tuckwell.
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THE
BOTANICAL SOCIETY & EXCHANGE CLUB OF THE BRITISH ISLES.

THE REPORT OF THE SECRETARY & TREASURER
G. CLARIDGE DRUCE, YARDLEY LODGE, OXFORD,
FOR 1919.

BALANCE-SHEET FOR 1918.

Subscriptions received,	£103	18	9	Balance due from 1917,	£5	16	1
Sale of Reports and Advertisements,	14	19	0	Printing Reports, Supplements, &c.,	102	4	9
Balance due to Treasurer,	5	1	3	Expenses of Distribution,	3	2	6
				Postages, Carriages, Stationery, &c.,	12	15	8
	£123	19	0		£123	19	0

Life Members' Fund (at cost), invested in War Savings, £35 ; in hand, 13s.
Audited and found correct, January 25, 1920.—F. Twining.

All subscriptions should be paid to the above address on the first of January each year or to the account of G. C. Druce in the London County, Westminster and Parr's Bank, Oxford Branch. Payment in advance for two or more years saves much trouble and expense. Exchange Members pay 7/6, Ordinary Members 5/-. New Ordinary Members pay 11/-, Exchange Members 15/- which covers the entrance fee.

There are still a few complete sets of Volumes I., III., and IV. of the *Reports* available to members at £1 10s each. Parts can also be obtained.

The greatly increased cost of printing, postages and paper has made it extremely difficult to avoid a deficit. Indeed had all the expenses been charged a loss would have been shown on the year's working. One instance may be cited. In the past 17 years two

Barlock typewriters have been worn out for which no charge has been made. In order to keep up our pagination in the future it will apparently be necessary to increase the subscription. This one would greatly regret. Would not those who can afford to help subscribe an annual sum say of £3 or £5? If a dozen would help in this way the tension would be removed. As it is the *Reports* are probably the cheapest printed scientific matter issued, and they have the largest circulation of any purely Botanical publication in Britain.

We have to thank Mr W. C. Barton for a donation to the Benevolent Fund, for his very able editing of the Distributor's Report and for his distributing the plants so expeditiously. He spared no trouble in elucidating the accurate names of the critical species in which the divergent views of members had to be carefully judged and discriminated. Rarely have we had a *Report* freer from ambiguity. In addition his own careful research has settled more than one vexed question—*e.g. Spergularia*, and thrown light upon much that was obscure.

The production of the *Report* this year has been one of great difficulty, and almost led one to despair. The long delay adds much to secretarial work, in itself no light task. This year will witness, one hopes, an earlier publication.

We are indebted to Rev. F. Bennett, Mr T. Gambier-Parry, Mr F. N. Williams, and Mr and Mrs Corstorphine for literary help. Critical assistance has been rendered by Prof. Lindman, Prof. C. H. Ostenfeld, Mr C. E. Britton, Canon Bullock-Webster, Dr Drabble, J. Groves, W. P. Hiern, C. C. Lacaita, D. Lumb, W. H. Pearsall, H. W. Pugsley, Rev. H. J. Riddelsdell, Dr W. C. Smith, W. B. Turrill, Lieut. Col. A. H. Wolley-Dod and others. For naming adventive plants, great acknowledgments are due to Dr Albert Thellung. To Sir David Prain and the staff of the Royal Herbarium at Kew, to Dr Rendle and Mr E. G. Baker of the National Herbarium, Cromwell Road, and to Professor Percival, F.R.S., of the Royal Agricultural College, Reading, our grateful thanks are also due. We are indebted to Prof. Osler and the Committee of the Ashmolean Natural History Society of Oxfordshire for allowing us to incorporate the " Additions to the Berkshire Flora " taken from their Annual Report of 1919.

The year 1919 has witnessed much good work. A remarkable discovery was made by our member, Mr F. Robinson, in the well-explored district of the Lizard where he found a solitary plant of *Isoetes Hystrix.* He kindly sent it me and a microscopical examination showed that it was correctly named. The Misses Cobbe discovered a most extensive growth of *Scirpus nanus* (which has well nigh disappeared from its old habitats) near Pwlheli, Carnarvonshire. Mr Pugsley has reported (*Journ. Bot.* 175) *Euphrasia hirtella* from Llanberris where, in common with several members, I saw it last year. Professor Lindman has passed specimens gathered by me at Farr and Durness, Sutherland, as *Cerastium subtetrandrum*, a new British plant. Herr Dahlstedt has also determined some Dandelions, which I sent him before the war, as *T. laeistophyllum*, *T. brachyglossum*, *T. Norstedtii*, *T. tenebricans*, *T. dissimile*, and *T. faroense* and also two new species for one of which he proposes the name *T. anglicum.* The second is allied to *T. Dahlstedtii* Linb. f.

We have to offer very sincere congratulations to our Honorary Member and past Secretary, Mr J. Gilbert Baker, F.R.S., on his receiving the degree of Doctor of Science from Leeds University. May he live long to enjoy it. We also congratulate Mrs Gregory, the authoress of *British Violets*, upon her receiving a Civil List Pension " for her service to Botanical Science." Our heartiest good wishes are offered to Miss Hersie Butler, the Hon. Miss Evelyn de Saumarez, and Lady Kathleen Thynne on their marriages respectively to Major the Hon. Ivo Fiennes, Major Wood and Captain O. H. Stanley, D.S.O.; also to Mr T. J. Foggitt, the son of an old Secretary, who has also been married during the year.

Our congratulations go to Mr R. H. Compton, Prof. F. Keeble, Prof. R. C. Maclean and Prof. R. Yapp on their appointments to the chairs of Botany at Cape Town, Oxford, Cardiff and Birmingham, and now to Prof. A. H. Trow who has been made Principal of the University at Cardiff.

Death has been terribly severe this year. No fewer than twelve of our members have been carried off. They include Dr A. Adams of Looe, Cornwall, an all-round naturalist, but chiefly interested in the Mycetozoa, of which he was preparing a list of the East Cornish species; Mrs Babington, the widow of our old member, the celebrated botanist, Charles Cardale Babington; the Rev. E. S. Marshall, a most valued member, whose contributions since 1892 have been both numerous, well selected, and carefully prepared. His contributions amounted in these 27 years to 5380 specimens. These were accompanied by numerous critical notes. He very freely commented upon the specimens contributed to the Exchange Club, and in the year 1901 acted as its Distributor and Editor. I made his acquaintance in his undergraduate days and had the pleasure of showing him *Orchis Simia.* In conjunction with our member, Mr F. J. Hanbury, an excellent *Flora of Kent* was published. His help is gratefully acknowledged by Frederick Townsend in the second edition of the *Flora of Hampshire*, and he recently issued a valuable second edition of the *Flora of Somerset.* He had a trained and critical eye and in his many visits to Scotland and Ireland made most valuable discoveries, including *Carex chordorrhiza*, which was new to Britain. He named among other plants *Ranunculus scoticus*, *Cochlearia micacea*, and *Saxifraga Drucei.* He was an acute student of the Hieracia, one of which he named after his wife and another after his fellow traveller, Dr Shoolbred. We have also lost Mr Herbert Napier, a very promising young botanist, the on of Professor Napier; the ex-Provost of Oriel, Dr C. L. Shadwell; Dr Frederick Smith, the well-known Harley Street consultant; Professor James Trail, F.R.S., the able joint editor of that useful periodical, now unfortunately moribund, *The Annals of Scottish Natural History*, who did so much for the study of Topographical Botany in Scotland; the octogenarian, Rev. Canon Tuckwell, most erudite and eloquent; Rev. C. H. Waddell an old member of the Exchange Club and contributor, and Prof. G. S. West, the son of a distinguished algologist, and himself the acknowledged British authority on the subject. At the close of the year this serious toll was augmented by the death of the world-renowned Sir William Osler who was to have given us an address on the unpublished correspondence of William Withering which had recently come into his possession. Our sincerest condolence is now offered to their relatives as it is to Professor Geddes on the loss of his son, Major Alastair B. Geddes, killed in action, who had won the Military Medal, and to our valued member Mr F. Ransom, and his wife on the terrible bereavement they suffered in the death of their two sons.

Lieut. Herbert Ransom, R.F.C., who was killed in action March 21st, 1918, and their eldest born, Captain John Ransom, M.C., of Pembroke College, Cambridge, aged 27, who died at Etaples of blood poisoning, following wounds. He lost his leg at Neuve Chapelle in 1914. General Uniacke said of him—"He was in every sense of the word a gentleman unafraid." Coming of a Quaker stock these two gallant boys were among the first to offer their services for their country, and even after John had lost his limb his ardour was not daunted and he bravely carried on hampered as he necessarily was by the effects of his wounds. To the writer it was a grievous sorrow that the two lads whom he had known from their earliest days should have thus so prematurely crossed the bar. They had the world at their feet. Well educated, intelligent, and blessed with great worldly possessions they inherited the right instincts of duty, loyalty and devotion. The country is the poorer for the loss of these and other deaths of the same kind it has had to bear.

We have lost six members by lapses or resignation.

The year 1919 has been signalised by a large accession to our ranks, and it is encouraging to find many young promising botanists ready to take up the torch which has fallen from other hands. Even with these additions many counties are still poorly represented and Ireland lamentably so. A little more science and less politics would not be unwelcome there. Her Royal Highness, The Princess Royal, has consented to became a Patroness. Among our new members for 1919-1920 are:—H.H. Prince Roland Bonaparte, Dr A. Adams, F. Allchin, M.A., G. Stafford Allen, Miss Barbara Allen, Mrs Paul Ascherson, Mrs Berkeley, Rev. P. Bevan, M.A., the Natural History Society and Free Library of the City of Birmingham, J. C. A. Boys, C. E. Brown, Dr Robert Bridges, the Poet Laureate; Miss Diana Cator, Stanley Chipperfield, W. G. Clarke, F.G.S., W. G. Craib, Lady Douie, Capt. Eckford, Miss Dora Egerton, E. W. Ellis, Mrs Evans, Mrs Graham, R. D. Graham, H. Gray, Capt. W. Balfour Gourlay, A. E. Greaves, H. L. Green, J. R. H. Greeves, R. Grierson, A. E. Hall, Leslie B. Hall, F.L.S., Rev. Charles Hall, G. W. H. Harris, Dr J. Harley, F.L.S., Miss Haynes, Sir George Holford, J. Humphreys, F.L.S., The Countess Jersey, Miss Jeyes, D. A. Jones, M.Sc., H. Humphrey Jones, Ph.C., F.L.S., E. Marsden Jones, F.L.S., Prof. F. Keeble, D.Sc., F.R.S., H. H. Knight, G. W. E. Loder, F.L.S., R. B. Loder, Dr F. Long, R. Lynch, M.A., Prof. R. C. Maclean, D.Sc., Mrs Mallinson, The Manchester Free Library, H. McKechnie, F. Mills, J. F. Milne, R. H. Milne, Miss Mooney, Nottingham Museum, Rev. H. W. O'Rorke, L. G. Payne, Dr Olive C. Rayner, Reading Natural History Society, Paul Richards, Lady Rose, Miss Sangster, Lady Blanche Seymour, The Head Master of Shirburn (Noel Smith, M.A.), Dr Singer, W. W. Smith, D.Sc., Mrs Thatcher, Andrew Templeman, Alban Voigt, Capt. G. H. Vevers, Miss Williams, G. S. V. Wills, Ph.C., F.R.G.S.

We have secured for the next Editor and Distributor of the Exchange Club, that excellent Essex worker, Mr G. C. Brown. Parcels should be sent by December 1, 1920, to him at 16 Lion Walk, Colchester.

If members have any copies of *Reports* which they do not require, they would be gladly received by the Secretary who has now difficulty in making up sets.

PLANT NOTES, ETC., FOR 1919.

(Mostly New Plants to the British Isles).

3 (2). THALICTRUM BAUHINII Crantz Stirp. Austr. ii., 76, ed. alt. 105, 1759. Thal. foliis angustissimis aeque latis integerrimis. Crantz, *l.c.* Described by Rouy & Foucaud (*Fl. Fr.* i., 26):—Plant with long stolons; stem 5-12dm., strongly channelled, straight, not compressed; leaves erect, lanceolate throughout . . . the leaflets lanceolate-linear or linear, often shining, glabrous, as are the petioles, either entire or bi- or trilobed; flowers upright or a little inclined; stamens with apiculate anthers; carpels ovoid-rounded or suborbicular; panicle usually more or less narrow with ascending or upright branches. Native in the Isles of Gothland and Oeland, France, Germany, Switzerland, Austria, Hungary, Russia. Crantz's was an aggregate species. Alien. Near Clovenfords quarry, Selkirk, 1917, Miss I. M. HAYWARD. Origin probably hortal, but I have not seen it in gardens there. G. C. DRUCE.

22. RANUNCULUS BULBOSUS L., var. ALBONAEVUS (Jord. Diagn. 81 as a species). "Plante robuste: souche bulbiforme, grosse, déprimée; feuilles toutes tachées de blanc, velues, ternées ou biternées, à dents subobtuses; carpelles grandes, obovales." Rouy & Foucaud *Fl. Fr.* i., 105. Near Oxford, June 1918, G. C. DRUCE.

41 (2). R. PSEUDO-FLUITANS Baker & Foggitt, var. MINOR Pearsall in Rep. B.E.C. 436, 1918. Plentiful in the Wilts Avon as at Wilsford, Durnford, DRUCE and TENNANT; near Salisbury, S. Wilts, GODDARD; Llangammarch Wells, Brecon, Miss TODD. The flowers are not always smaller than type.

54 (3). AQUILEGIA PUBESCENS Colville in Contr. U.S. Nat. Herb. iv., 56, t. 1893. *A. formosa* Fisch., var. *flavescens* Hook. f. Bot. Mag. t. 65526. Non *A. flavescens* S. Wats. Alien, California. Naturalised on rocks near Aberdour, Fife, 1919, A. TEMPLEMAN.

68. ACONITUM NAPELLUS L., var. LACINIOSUM Seringe Mus. Helv. i., 159, 1823. Floribus laxe spicatis paniculatisque coeruleis amplis subconicis, laciniis foliorum profundis linearibus acutis. Cette variété se distingue de toutes les autres par un casque très bombé, embrassant les sépales latéraux et se prolongeant insensiblement en un bec aigu. Les feuilles ont leurs lobules très longs-linéaires et terminés insensiblement en pointe. See BARTON in *Rep. B.E.C.* 485, 1918. It flowers earlier than the common Swiss plant (*compactum*) and the leaves are thinner in texture. The foregoing identification is agreed to by Dr Stapf who, for a long time, thought our British plant was distinct from the continental *Napellus*. The question arises. Is our plant indigenous in the same sense as the Oak or has it spread from ancient cultivation? Aconite has been known from early times as a virulent poison, and has long been cultivated in Britain. It must be remembered that Carmarthenshire was the seat of a cult in medicine in quite early days (*cf.* Dr Small, who says that " Medical Botany was one of the three sciences of the Gwyddoniad before 1000 B.C., a statement I have been unable to confirm). Had our British plant been distinct from any continental form its claims to indigenity would have been strengthened. Of course it is completely naturalised.

134 (2). ARABIS MURALIS Bert. Pl. Rar. Ital. dec. ii., 37. Alien. Greece, Italy. Rubbish heaps, Glasgow. R. GRIERSON.

183. SISYMBRIUM SOPHIA L., forma GLABRESCENS (Zuratzka) Beck. Alien, E. Europe. Hull Docks, 1903, C. WATERFALL. Det. A. THELLUNG.

187 (2). S. HISPANICUM Jacq. *Rep. B.E.C.* 274, 1907. St Philip's, Bristol, J. W. WHITE in *Flora Bristol* 149. This must be deleted. The specimens are, teste Dr Thellung, S. VOLGENSE Bieb., which I gathered at St Philip's in 1916. Equally wrong were the referees (*Wats. B.E.C.* 220, 1910), who ascribed it to *S. obtusangulum* or *Brassica elongata*. G. C. DRUCE.

192. S. THALIANUM Gay, forma PUSILLA (Petit) = f. SIMPLEX Zimm. Wall, Cuxham, Oxon, G. C. DRUCE. See *Rep. B.E.C.* 316, 1915.

202. CAMELINA SATIVA Crantz, var. PILOSA DC. Syst. Nat. ii., 516, teste Thellung. *Myagrum Turcicum* Chabr. Sciagr. 283, f. 4. *M. sylvestre* C. Bauhin Pinax 109. Differs from the type "foliis integris pilosis" and appears to be the wild form. On the docks, Southampton, S. Hants, 1895, G. C. DRUCE; Castle Hill, N. Devon, Countess FORTESCUE.

202 (2). C. ALYSSUM (Mill.) Thell. *C. foetida* Fr. Railway-side, Ashton, Northants, 1899, G. C. DRUCE.

215. BRASSICA NIGRA Koch, var. BRACTEOLATA (Fisch. & Mey.) Spach. Probably of alien origin. Brickfield, The Folly, Hitchin, Herts, 1918, J. E. LITTLE. Det. A. THELLUNG.

215. B. NIGRA (L.) Koch, var. TURGIDA (Pers.) Alef., accod. ad var. BRACTEOLATUM (Fisch. & Mey.) Spach. Alien. Brickfield, The Folly, Hitchin, Herts, 1918, J. E. LITTLE. Det. A. THELLUNG.

216 (2). B. TURGIDA Pers. Syn. ii., 207. *Sinapis turgida* Del. *S. arvensis*, var. *turgida* Aschers. & Schweinf. Ill. Fl. Egypte 41. 1887. Alien, Egypt. Canal Bank, Seaforth, 1872, H. S. FISHER.

247 (31). LEPIDIUM RAMOSISSIMUM A. Nelson in Bull. Torr. Bot. Club 124, 1899. Alien, N. America. St Philip's Marsh, Bristol 1916, Miss COBBE and G. C. DRUCE; Welbeck, Notts, 1918, R. W. GOULDING.

253. IBERIS AMARA L., var. DECIPIENS (Jord.) Thell., forma RUFICAULIS Rouy et Fouc., non Lej. Near Hitchin, Herts; Princes Risborough, Bucks; Wallingford, Oxon, G. C. DRUCE.

287. HELIANTHEMUM BREWERI Planchon. Culture accentuates the characters which distinguish it from *guttatum*. The bracts become large, the pubescence slight, chiefly of stellate hairs, the flowering branches relatively short, and the leaves broadly elliptical, blunt. Specimens grown in ordinary garden loam by Mr J. E. Griffiths from Holyhead seeds have leaves (the third pair) 60 mm. long by 23mm. broad. The petals, with dark blotch at base, make a glorious show on a sunny morning, opening about 9 but falling before 1 p.m., to be succeeded the next day by another display. Mr

Griffiths says at Holyhead in poor soil the plants are from 1-3in. high, but in shady spots at Llanfairynghornwy he has seen them as large as the specimens sent to the Club this year. Occasionally the bracts are lacking f. EBRACTEATA. G. C. DRUCE.

347. SILENE ARMERIA L., var. SPARSIFLORA Schur Enum. Pl. Transsilv. 105. Alien. Harlech, Merioneth, 1918, Miss COBBE. Probably hortal, and perhaps not more than a depauperate form. The plant is, however, more branched than the type and the flowers are more longly pedicelled.

370. CERASTIUM VULGATUM L. forma LUCENS Druce in Rep. B.E.C. 493, 1918. [Ref. No. R. 7195.] Turran Reif, N. Aberdeen, on serpentine, Aug. 1918. Mrs Wedgwood found it there some years ago in the locality where *Asplenium Serpentini* abounds. It differs from the type in its small size and in its shining, nearly glabrous leaves. The small flowers separate it from *C. Serpentini*. It may prove to be a distinct variety. G. C. DRUCE.

374 (2). C. SUBTETRANDRUM Murbeck in Baenitz Herb. Eur. Lief. n. 73, n. 7165, 1892 et Bot. Not. 259, 1898. *C. glutinosum*, var. *bracteatum* C. A. Westerl. in Bot. Not. 145, 1863, not *C. bracteatum* Rafin. of 1814. *C. pumilum*, f. *subtetrandra* Lange Haandb. Dansk. Fl. 676, 1887. Durness, between Farr and Bettyhill, W. Sutherland, in dry sandy situations. This is closely allied to *C. tetrandrum* Curt. of which it may only be a marked variety. The members of this genus are, however, plastic and critical. Some botanists consider it to be a sub-species, but for the time being the grade given it by Murbeck and adopted by Lindman is chosen. Murbeck diagnoses it—Caulis ramique a medio vel in superiore tantum parte floriferi; bracteae omnes herbaceae, late ovatae-ovato-lanceolatae, inferiores quoque foliis caulinis angustiores ac breviores vel in individuis luxuriantibus eis aequilatae, submucronatae; sepala in acumen longum membranaceum producta; semina 0.45mm. diam., dilute brunnea. *C. tetrandrum* he diagnoses—Caulis ramique plerumque jam longe infra medium floriferi; bracteae omnes totae herbaceae, orbiculari-ellipticae-ovatae. inferiores foliis caulinis latiores iisque saepius aequilongae. obtusae: sepala sat breviter acutata; semina 0.6mm. diam., obscure brunnea.

It is a Baltic plant which I have long been searching for. Dr Lindman has identified it but I have yet to submit it to Dr Svante Murbeck. G. C. DRUCE.

423. ELATINE HYDROPIPER L. in Worcestershire. For many years Worcestershire botanists have endeavoured to confirm the occurrence of this plant in the county. In the *Phytologist* vol. ii., 401, 1857-1858 A. Irvine records the discovery of *Elatine Hydropiper* along with the commoner *E. hexandra* as growing "in a mill-pond near Churchill, Kidderminster." Since that date diligent search has been made through all the chain of pools in that neighbourhood but neither of the Elatines have been found. On the 4th August 1919 I visited Westwood Pool, distant about a mile from Droitwich. This pool is a lake of considerable size and on its northern and western sides I found on the bare mud as it was gradually exposed by the evaporation of the water, dense quantities of *Elatine Hydropiper*, and I could also clearly detect large numbers of it growing on the mud still covered by the water. This plant seems to flower and to be fertilised whilst still under the water, as all the specimens that I obtained were in fruit and contained the characteristically bent, v-shaped seeds in their capsules. CARLETON REA.

485. GERANIUM ROTUNDIFOLIUM L., forma THURSTONII Druce. Essentially differing from the type in having the petals slightly emarginate, a character which, when it was in the young flowering stage combined with its habit, led me to think it might be a form of *pusillum*. More mature specimens, however, showed that its fruit was normal *rotundifolium*. If its more deeply lobed leaves and emarginate petals prove constant it may be worth varietal distinction. The specimens were gathered by our member, Mr Edgar Thurston, on Looe Cliffs, Cornwall, in May 1919, the earlier being sent on March 21 of that year. Mr Thurston's large collection of Cornish plants has been presented to Kew. G. C. DRUCE.

488. G. ROBERTIANUM L., nova sub-sp. CELTICUM Ostenfeld. Quam typus gracilius et multo minus foetidum; caules non nisi ad nodos erubescentes, etiam in plantis in sole natis, petioli foliorum et pedunculi inflorescentiae quam in typo breviores; laminae foliorum

superiorum quam petioli longiores. Habitat: Hibernia occid. in saxis calcareis ad Ballyvaghan. During the International Phytogeographical Excursion in 1911 a very interesting form of *Geranium Robertianum* was found on the calcareous cliffs near Ballyvaghan, Co. Clare, Ireland. At first it was taken to be a form of the allied species, *G. purpureum* Forst., but further examination soon showed that the flower and fruit did not agree with this species, but with common *G. Robertianum.* Nevertheless it had quite a distinct habit and was much more slender and in spite of growing in exposed places was only slightly red while *G. Robertianum* from sunny localities is usually very red all over (f. *rubricaule* Hornem.). As I happened to save ripe seeds in the specimens brought home I had them sown and have since 1912 had the plant in cultivation in the Botanical Garden of Copenhagen. It has kept its peculiarities quite unaltered during these seven years in which I have grown four generations. I have had the Irish plant and the true *G. Robertianum* raised from seeds from Denmark and from Scotland growing side by side to be able to compare them when existing under the same outer circumstances. The results of these repeated examinations show that the Irish plant is a well marked " microspecies " which breeds true and keeps constantly different from the ordinary *G. Robertianum.* A comparison between the two plants gives the following characters :—

G. Robertianum TYPUS. Strongly scented (foetid), coarse, tinged with red at the nodes and at the basal parts of the peduncles and more or less at the pedicels and the basal parts of the sepals. Leaves long-stalked, the blades of the leaves, in the axils of which the floral peduncles appear, shorter than the stalks. Peduncles about eight times as long as the leaf-stalk. The whole plant much hairier with long patent hairs.

G. Robertianum, sub-sp. CELTICUM. Faintly scented, slender and tiny, only somewhat tinged with red at the nodes in spite of growing in the open. Leaves shorter stalked, the blades of the leaves, in the axils of which the floral peduncles appear, longer than the stalks. Peduncles about five times as long as the leaf-stalks. The whole plant less hairy than the type.

The differences between the two plants are already very strongly marked during the first year of growth. The rosette of leaves is quite green and smaller in the Irish plant, while in the typical plant it is more or less tinged with red, coarser, more hairy, and with longer stalks, the whole rosette being larger and coarser. I have been unable to identify the Irish plant with any hitherto described form of the *Robertianum*-group and have therefore given it a name referring to its place of occurrence. I do not know anything more about its distribution, but recommend this point to British botanists. C. H. OSTENFELD.

494 (2). ERODIUM GEOIDES St. Hil. Fl. Bras. Mér. i., 80. Alien, S. America—Argentine, Uruguay, &c. Canal. Meanwood. Leeds, York, 1914, F. A. LEES. Det. A. THELLUNG. Adventive also in Germany.

506 (2). OXALIS DILLENII Jacq. Oxal. 28. 1794. *O. Navieri* Jord. in Billot Annot. 20, 1865. Alien, Europe. Garden ground. Cemmaes, Montgomeryshire. The description of *O. Navieri* (*l.c.*) is :—Fruiting peduncles deflexed, usually two flowered ; adnate stipules absent or very small ; stems ascending from the base, not rooting and not stoloniferous ; plant finely (not shaggy) pubescent ; flowering early. Type *corniculata* has the fruiting peduncles deflexed, usually 2-7 flowered ; adnate stipules quite easily seen ; stems spreading and creeping ; plant with no subterranean stolons ; plant pubescent with shaggy hairs ; flowering early. Another species, *O. europaea* (*stricta* L.), has the fruiting peduncles erect-ascending (rédressées) : styles spreading, not rapprochés at the top ; stipules none ; stems erect or diffuse, not creeping or ascending from the base, with the subterranean stolons numerous ; plant glabrescent and late flowering. Jordon, however, admits that there is no sharp division of characters. Rouy & Foucaud (*Fl. Fr.* iv., 123) treat *O. Navieri*, *O. diffusa* Bor. and *O. stricta* L. (under which is *europaea*) as three forms of *corniculata*, but oddly enough no reference is made to Jacquin's plant. B. L. Robinson (*Journ. Bot.* 386, 1906) tried to reverse the Linnean names as universally used till then, but fortunately he has had no important support. G. C. DRUCE.

530 (2). LUPINUS POLYPHYLLUS Lindley Bot. Reg. t. 1096. Alien, California. On the grassy border of Scoulton Mere, W. Norfolk, F. ROBINSON. Recorded as *nootkatensis* in *Rep. B.E.C.* 497,

1918. Known in the locality for 30 years, of course planted. It is one of the most popular garden lupines. See Nicholson *Gard. Dict.* iv., 302. Mr Robinson showed it me growing at Scoulton in 1918 and I have seen it native at Victoria, B.C. G. C. DRUCE.

589 (2). MEDICAGO ROTATA Boiss. Diagn. ser. i., 2, 24. Alien, Scio, Syria. Gorgie, Midlothian, J. FRASER.

595 (2). MELILOTUS POLONICA Pallas Reise iii., 537, 1776, ? not of Persoon. *Melilotus wolgica* Poir. Enc. Suppl. iii., 648, 1813 = *M. ruthenica* Ser. in DC. Prod. ii., 186. Alien, Russia. Leith, Midlothian, 1910-12, J. FRASER. Det., as *wolgica*, by W. B. TURRILL.

640 (4). TRIFOLIUM CILIATUM Nuttall in Journ. Acad. Philad. N.S. ser. 2, i., 152, 1847. *T. ciliolatum* Benth. Pl. Hartw. 304. Alien, N. America. Llanberris, Carnarvon, Aug. 1919, Miss A. B. COBBE !

649. LOTUS HISPIDUS Desf., var. MAJOR Rouy Fl. Fr. v., 153. *L. suaveolens* Pers. Syn. ii., 354. Tiges de 3-6dm., épaisses; folioles grandes (7-12mm. de long), plus larges, ovales-lancéolées. On the slopes of the east cliff, Polperro, Cornwall, 1919, E. THURSTON; Vale, Guernsey, 1906, G. C. DRUCE. Assuming our plants are identical with those of Rouy one would scarcely have given varietal grade as my specimens grew in a damp quarry and Mr Thurston's on ground under vegetable cultivation.

Gen. 145 (2). HOSACKIA Dougl., ex Benth. in Bot. Reg. t. 1257, 1829.

650 (10). H. AMERICANA Piper in Contr. U. S. Nat. Herb. xi., 366, 1906. *H. Purshiana* Benth. *Trigonella americana* Nuttall Gen. ii., 120, 1818. *Lotus americanus* Bisch. Alien, N. America. Glasgow, 1919, R. GRIERSON.

684 (5). VICIA ALTISSIMA Desf. Fl. Atl. ii., 163. Alien, Italy, Dalmatia, N. Africa. Garden weed, Haymesgarth, Cleeve Hill, E. Gloster, 1919, C. BAILEY.

697. V. CORDATA Wulfen in Sturm Deutschl. Fl. heft 32. *V. angustifolia*, var. *cordata* Boiss. Fl. Orient. ii., 575. *V. cordifolia*

Spreng. Syst. Veg. iii., 264. *V. sativa*, var. *cordifolia* Beck. This is characterised by the obcordate leaflets of the lower leaves, those of the upper are oblong-cuneiform with a deep notch, the midrib ending in a long mucro ; flowers smaller than those of *sativa* but larger than those of *angustifolia* ; calyx-teeth often longer than the tube ; pods yellow when ripe, smooth ; seeds more compressed than those of *sativa*. The aspect is that of a luxuriant *angustifolia* rather than *sativa*. Watton, Norfolk, 1915, F. ROBINSON ; Cothill, Wootton, &c., Berks, G. C. DRUCE. See *Rep. B.E.C.*, 316, 1913.

731 (1). PISUM FULVUM Sibth. and Sm. Fl. Graeca vii., 79. Alien, Asia Minor, Syria. On cotton-cake refuse, Colchester, 1914, G. C. BROWN.

739. PRUNUS DOMESTICA L. Stone rough on its surface.

Rouy & Camus (*Fl. Fr* vi., 4, 1900) group under *P. sativa* R. & C. three sub-species, *i e.*, *P. domestica*, *P. ambigua* R. & C, and *P. insititia*, thus briefly described in the clavis :—

1. Jeunes rameaux glabres ; drupes oblongs : arbre ou arbrisseau non épineux.. *P. domestica* L.
2. Jeunes rameaux brièvement pubescents ou faiblement velus ; drupes ovoides ou ovales-oblongs ; arbrisseau ou arbre non épineux, rarement un peu épineux.................................... *P. ambigua* R. & C.
3. Jeunes rameaux plus ou moins velus ; drupes globuleux ou subglobuleux : arbre ou arbrisseau épineux ou non épineux.. *P. insititia* L.

P. DOMESTICA is divided into 4 subordinate species :—

1. Pédicelles solitaires, glabres ; fleurs paraissant longtemps avant les feuilles ....*P. elegans* Clav.
Pédicelles géminés, pubescents ; fleurs paraissant avant les feuilles.. *P. saxicola* Bor.
Pédicelles géminés, pubescents ; fleurs et feuilles contemporaines 2

2. Fleurs nombreuses : pétales dressés ; anthères jaunes..*P. gymnoclada* Clav.
Fleurs peu nombreuses ; pétales étalés ; anthères presque orangées ....*P. intermedia* Clav.

P. AMBIGUA is divided into 7 subordinate species :—

1. Arbrisseau un peu épineux ; drupe bleuâtre ....*P. silvatica* Desv.
Arbre ou arbrisseau non épineux ; drupe d'un violet noirâtre 2
Arbre ou arbrisseau non épineux ; drupe jaune ou rougeâtre ; calice à tube glabre 4

2. Fleurs paraissant en même temps que les feuilles ; pétales grands, légèrement teintés de jaune...*P. Pruna* Bor.
Fleurs passées avant le développement des feuilles 3

3. Pétales d'un blanc rosé, à bords non contigus...........*P. Ballota* Lamotte.
Pétales d'un blanc jaunâtre, à bords contigus.......*P. Arvernensis* R. & C.

4. Fleurs paraissant avant la naissance des feuilles.......... 5
Fleurs paraissant en même temps que les feuilles ; fruit petit d'un vert jaunâtre, à saveur musquée.................. ...*P. Varactensis* Bor.

5. Fruit mûr déprimé au sommet ; d'un jaune verdâtre, puis glauque .... *P. Sanctae-Catharinae* Lamotte.
Fruit mûr un peu déprimé au sommet, d'un rouge brun .... *P. rubescens* Lamotte.

P. INSITITIA L. is divided into 16 subordinate species :—

1. Feuilles atténuées aux deux extrémités, aiguës au sommet.......... 2
(On doit observer les feuilles sur les rameaux fertiles.)
Feuilles atténuées aux deux extrémités, subarrondies au sommet... 7
Feuilles faiblement atténuées à la base, obtuses au sommet.......... 11
Feuilles ovales-elliptiques ou suborbiculaires................. *P. dulcis* Clav.

2. Fleurs en fascicules denses.................................... 3
Fleurs en fascicules lâches.................................... 6

3. Pétales largement ovales, presque contigus........................ 4
Pétales ovales-oblongs, écartés, non contigus........................ 5

4. Style dépassant les anthères ; arbrisseau non épineux... *P. silvestris* J. & F,
Style ne dépassant pas les anthères ; arbrisseau tortueux, diffus, épineux .... *P. virescens* Paillot.

5. Anthères d'un rouge violacé ; arbrisseau épineux.... *P. erubescens* Paillot.
Anthères jaunes ; arbrisseau peu ou point épineux........................ *P. Vapincensis* J. & F.

6. Pétales grands, presque contigus ; anthères jaunes.... *P. sepivaga* J. & F.
Pétales petits, non contigus ; anthères rougeâtres....... *P. Desvauxii* Bor.

7. Fleurs en fascicules lâches.................................... S
Fleurs grandes, en fascicules denses ; anthères roses *P. rosiflora* Paillot.

8. Fleurs petites ; arbrisseau épineux ; anthères jaunes ... *P. porcorum* Clav.
Feuilles grandes ; arbrisseau non épineux 9

9. Fleurs grandes ; pétales rétus ou tronqués, presque contigus ; anthères orangées .... *P. agrestis* J. & F.
Fleurs assez petites ; pétales ovales, arrondis au sommet.. 10

10. Style égalant les étamines ; anthères jaunes ; pétales écartés........................ *P. discreta* R. & C.
Style plus court que les étamines ; anthères d'un jaune vif ; pétales presque contigus........................ *P. dumetorum* J. & F.

11. Arbrisseau à épines longues, étalées ; fleurs grandes ; pétales contigus........................ *P. cerasiflora* Paillot.
Arbrisseau non épineux.................................... 12

12. Fruit petit (de la grosseur d'une cerise) ; feuilles assez petites, étroites, oblongues-obovales .... *P. cinerascens* Lamotte.
Fruit assez gros ; feuilles plus grandes et plus larges.................. 13

13. Feuilles grandes, largement obovales ; fleurs en fascicules assez lâches ; pétales suborbiculaires .... *P. latifolia* J. & F.
Feuilles médiocres, elliptiques-oblongues ; fleurs en fascicules compactes ; pétales ovales-oblongs .... *P. congestiflora* Clav.

P. SPINOSA L. This very polymorphic species, with stone smooth on its surface, is divided into 14 subordinate species :—

1. Pédicelles glabres.................................... 2
Pédicelles pubescents ou velus.................................... 7

2. Drupe ovoide ; feuilles glabres sur les deux faces ; fleurs épanouies avant la naissance des feuilles........................ *P. ovata* R. & C.
Drupe sphérique.................................... 3

3. Feuilles adultes glabres sur les deux faces........................ 6
Feuilles pubescentes, au moins en dessous........................ 4

4. Fleurs et feuilles naissant en même temps ; anthères jaunes ; fleurs petites ; calice rougeâtre ; arbrisseau épineux .... *P. ericiflora* Savat.
Fleurs assez grandes, naissant avant les feuilles 5

5. Anthères jaunes ; fleurs épanouies avant la naissance des feuilles ; arbrisseau nettement épineux .... *P. fœcundissima* Clav.
Anthères d'un jaune orangé ; fleurs s' épanouissant à la naissance des feuilles ; arbre presque inerme .... *P. subinermis* Clav.

6. Fleurs épanouies avant la naissance des feuilles ; calice à dents non rétrécies à la base .... *P. vulgaris* R. & C.
Fleurs et feuilles naissant en même temps ; calice à dents rétrécies à la base .... *P. lucida* Clav.

7. Feuilles glabres sur les deux faces ; drupe ovoide .... *P. lucens* Savat.
Feuilles pubescentes, au moins en dessous ; drupe sphérique 8

8. Feuilles pubescentes sur les deux faces 9
Feuilles glabres en dessus, pubescentes en dessous 11

9. Fleurs naissant avant les feuilles ; pédicelles pubescents 10
Fleurs naissant en même temps que les feuilles ; pédicelles velus .... *P. Lamottei* Savat.

10. Arbrisseau peu épineux, à bois non grumeux ; fleurs peu nombreuses, assez grandes ; anthères jaunes .... *P. pubescens* Clav.
Buisson très épineux, à bois grumeux ; fleurs nombreuses, petites ; anthères rouges .... *P. densa* Martr.

11. Drupe à peine acerbe ; fleurs naissant peu avant les feuilles ; arbrisseau peu épineux .... *P. subcylindrica* Savat.
Drupe très acerbe ; fleurs naissant bien avant les feuilles 12

12. Fleurs petites ; anthères rouges ; drupe sphérique ; pétales lancéolés-oblongs ; arbrisseau peu épineux .... *P. parviflora* Paillot.
Fleurs petites ; anthères jaunes ; drupe plus large que long ; pétales ovales ; arbrisseau subinerme .... *P. depressa* Clav.
Fleurs relativement grandes ; anthères d'un rouge orangé ; pétales largement ovales ; drupe sphérique ; arbrisseau très épineux .... *P. latiflora* Clav.

In Jordan and Fourreau's magnificent *Icones ad Floram Europae* 1866-8, are figured ten species of *Prunus*, *i.e.*, 219. *oviformis*, 220. *densiflora*, 221. *rusticana*, 222. *peduncularis*, 223. *sepivaga*, 224. *dumetorum*, 225. *latifolia*, 226. *Vapincensis*, 227. *sylvestris*, and 228. *agrestis*, all first described by those authors. Of these six are put by Rouy under *insititia*, the remaining, *i.e.*, *densiflora*, *rusticana*, *peduncularis*, and *oviformis* have, he contends, too incomplete a description to allow him with certainty to place them under *spinosa*. It may be added that Savatier (*Bull. Soc. Rochel* 40, &c., 1882) named a large number of micro-species of which nine are said by M. Rouy to be without importance. Clavaud (*Act. Soc. Linn. Bordeaux* 600, &c., 1884) also described many species which for the greater part have been accounted for by M. Rouy, and many others have been described by M. Paillot in *Bull. Bot. Soc. Fr.* vol. xvi.

I suspect a part of the excessive variability of the section of *Prunus*, under which are grouped the three Linnean species, is due to hybridity. That being the case, it follows that in France, where so many forms of *domestica* are grown and run wild, the number of more or less distinct forms would be greater than in Britain where the races of *domestica* are comparatively few. It by no means follows that a half-way house is necessarily a hybrid, but if one sees a very spinous *insititia* with paler anthers the influence of *spinosa* is suggested, so too if *insititia* occurs with larger and broader leaves and longer drupes the influence of a *domestica* form seems probable. Again larger-flowered, or longer-fruited *spinosa* would likely result from an *insititia* parentage. *Coetanea* may be a real sub-species but the offspring of a cross varies in such remarkable ways that its characters may also have been caused by hybridity. I have seen it, however, in localities where one or the other or both the supposed parents were absent. Herbarium specimens are practically valueless. The Blackthorn is a most refractory subject. At least three gatherings of each plant are necessary to obtain flower, leaf and fruit. The spaces left between the sheets in the cabinet are the refuge of every herbarium pest, and it is usually firewood material alone that presents itself for study. Flowers should be dried separately and at once affixed to gummed paper with a note as to the colour of the anthers. The fruits shrivel or mould or are squashed in drying so that they are practically useless. A coloured drawing of the fruit with exact measurements is necessary. In Britain I can differentiate about six forms, but even with the beautiful plates of Jordon and Fourreau I cannot say that our plants are exactly represented in them. That too is the case with many Roses and I think Dahlstedt would also say the same of many British Hieraeia to which his name is at present attached. Perhaps members will make investigation of the Pruni. G. C. DRUCE.

740. P. INSITITIA × SPINOSA? Mr J. E. Little sent from Old Park Wood, Fishbourne, Sussex, a plant locally called Wild Damson, bearing fruit which suggests the above parentage. The petioles are hairy, as are the undersides of the leaves; the branches spinous; the leaves elliptic, strongly veined and thick in texture; the fruits 24 x 22 mm. and 22 x 20 mm. black, pendulous. This plant was also

sent to the Watson Exchange Club. (See *Report* 57, 1918.) Flowers will be gladly received.

743 (2). SPIRAEA OBOVATA Waldst. & Kit., ex Willd. Enum. Hort. Berol. 541. *S. hypericifolia* Hort., non L. Alien, Europe austr. occ. Hortal. This is, teste Thellung, Baxter's plant of 1830 recorded from South Hinksey as *S. hypericifolia* in *Fl. Berks.*

906. POTENTILLA NORVEGICA L., var. VARIANS (Moench Meth. 658, 1794, as a species) comb. nov. *P. norvegica* L., var. *degener* Lehm. Pugill. ix., 75 and Revis. Potentil. 199, 1856. Differs from the type "foliis radicalibus nonnullis digitatis vel pinnatis." Alien. Race-course, Northampton, 1917, ex H. N. DIXON. Det. A. THELLUNG, as var. *degener*. I have had it also from Slough, Bucks. G. C. DRUCE.

923. ROSA ARVENSIS Huds., var. SUBERECTA mihi. This differs from the type in the erect, persistent sepals. Greenham, Berks, 1893, G. C. DRUCE. See *Fl. Berks* 206, 1897.

926. R. CANINA L., var. NITENS Desv. in Journ. de Bot. ii., 114. Sutton Walls, Hereford, A. LEY in *Hb. Druce.*

928. R. ANDEGAVENSIS Bàst., var. LITIGIOSA (Crép.). Hunsbury Hill, Northants, 1878, then named *verticillacantha* by Baker. Now referred to the above by Wolley-Dod.

931. R. DUMETIS Burnat. Foy, Hereford. A. LEY as *Blondeana* in *Hb. Druce.*

931 (2). R. OPERTA Déségl. Ivy Bridge, S. Devon; Claydon, Sussex; Milton Road, Banbury, Beckley, Oxon; Foxhall, Northants. G. C. DRUCE.

932. R. CANESCENS Baker Rev. 28. Allied to *hemitricha* Rip. of the group *dumetorum*, but more biserrate, teste Wolley-Dod. Only known with certainty from v.-c. 12. Twinstead, N. Essex, Aug. 1919. G. C. DRUCE.

936. R. MICRANTHA Sm., var. BORAEANA R. & F. Ascot, Berks. G. C. DRUCE.

Var. PARVIFLORA Rouy=*R. diminuta* Bor. Maidenhead, Berks, G. C. DRUCE.

The foregoing are identified by Lieut.-Col. Wolley-Dod.

969 (4). CRATAEGUS SANGUINEA Pall. Pl. Ross. i., 25, var. GLABRA Maxim. Alien, Russia, Siberia. Three Shire Bush, Leicester, 1915, A. R. HORWOOD. Planted of course.

981. SAXIFRAGA HYPNOIDES L., var. ROBUSTA ined. Probably from Black Head, Co. Clare. Flowers mostly larger; axillary buds either absent or rudimentary; stems stouter and stiffer, as are the cauline leaves. E. S. MARSHALL in *Wats. B.E.C.* 63, 1918.

1074 (4). OENOTHERA AMOENA Lehm. Ind. Sem. Hort. Hamb. 8, 1821. *Godetia amoena* G. Don. Alien, N. America. Hortal. On the fore-shore near Golspie, E. Sutherland, 1902, G. C. DRUCE.

1075 (6). CUCUMIS MYRIOCARPUS Naudin in Ann. Sc. Nat. sér. 4, xi., 22, 1859. Alien, South Africa. Bradford, York, 1919, J. CRYER.

1114 (3). PIMPINELLA ANISUM L. Alien, Asia. St Philip's, Bristol, 1916, in some plenty, G. C. DRUCE and Miss COBBE.

1160. DAUCUS CAROTA L., forma NANUS. On the sea-sand near Farr, W. Sutherland, July 1919, G. C. DRUCE. Plant small, 9 cm., simple; leaves oblong, 3 cm. long exclusive of petiole, bipinnatifid, slightly bristly; umbels 1-2, small, 15-20 mm. across; involucral leaves narrowly trifid, as long as the flowers. It differs from the var. *exiguus* Pers. and the sub-var. *pusillus* Coss. & Germ. in the trifid involucral leaves, and in other ways, but both are probably dry-soil forms growing in sea-sand in full sun and wind exposure.

1181. VIBURNUM LANTANA L., var. VIRIDE Kerner in Dalla Torre and Sarnth. Fl. Tirol vi., 3, 394, 1912. Wytham Wood, Berkshire, partly shaded by trees but itself a bush about 15 feet high. It was first noticed by Master Owen, who showed the specimen to Mr G. Haynes. As it was so different from the normal form of *Lantana* I went with the finders to see if, as I suspected, it was a shade-grown form. The leaves are much thinner in texture, and almost devoid of the tomentum so characteristic of the type, but it was sparingly present on the veins of the underside. The cymose inflorescence is much less compact, the naked pedicels being 20 mm. long. This form must not be confounded with var. *glabratum* Chabt. in Bull. Bot. Soc. Fr. xxxi., 369, in which the leaves are undulated, almost glabrous, not tomentose on the veins and without the stellate hairs on the interspaces. Judging from specimens in *Herb. Baenitz* Wilsbaur's *glabrescens* (Celak. Result. . . . Bohm. 1892) is nearer our common plant. G. C. DRUCE.

1192. GALIUM BOREALE L., var. VOGESIACUM Rouy Fl. Fr. viii., 10. Differs from the type in having " feuilles ovales ou sublancéolées, médiocres; fruits hispides." Ben Laoigh, M. Perth; Glen More, Easterness. Rather a form than a true variety. G. C. DRUCE.

1195. G. HERCYNICUM Weig., var. TRANSIENS Rouy Fl. Fr. viii., 41. *G. montanum* Huds. Fl. Ang. 67, 1672, not of L. Differs from the type in its greater size—stem 10-25 cm. as against 5-15 cm.; in its narrower leaves, the upper linear-oblong in shape: in the oblong, elongate panicle with ascending not converging branches (not short and ovate); in the verticels being more or less remote, and in being less densely caespitose. Boar's Hill, Berks; Arthur's Seat, Edinburgh, G. C. DRUCE; Odiham Wood, N. Hants, Miss PALMER. Rouy cites Hudson for this variety but in *Flora Anglica* the leaves are said to be " obovatis." It seems rather a form dependent upon shade and shelter than a true variety, but cultural experiments are needed.

1198. G. PALUSTRE L., var. GLABRATUM Raunkier. Burpham Meadows, W. Sussex, 1918. A small glabrous form which is near *debile*. Prof. Ostenfeld names it as above. Raunkier is the author of the *Danish Excursions Flora*. G. C. DRUCE.

1244 (3). SOLIDAGO SEROTINA Ait., forma LATIFOLIA Thellung. Alien. Galashiels, Selkirk, 1917, G. C. DRUCE.

1250. ASTER NOVI-BELGII ?× SALIGNUS. Wicken Fen, Cambridge, Aug. 30, 1892, coll. G. GOODE; comm. J. A. WHELDON. See *Rep. B.E.C.*, 551, 1897. Both species have been recorded from this Fen but on these specimens Dr Thellung remarks "quasi intermedius inter *A. novi-belgii* et *A. salignus* Willd." This also may explain the divergent opinions given respecting the Wicken Fen plants. It will be well to collect plants having intermediate characters, so as to establish or disprove this suggested hybrid Aster.

1255 (2). A. LAEVIGATUS Lam. Enc. i., 307. Alien. N. America. Banks of the Thames at Maidenhead, Oct. 1821, W. BLAKE in *Hb. Druce*. Not given in *Fl. Berks*. Cynon side, near Llwydcoed, Glamorgan, 1901, H. J. RIDDELSDELL.

1257 (5). A. JUNCEUS Aiton Hort. Kew. ii., 304. Alien, N. America. Marston, Oxford, 1907, G. C. DRUCE.

1281 (2). INULA ENSIFOLIA L. Alien, Europe. Hortal. Holwood Park, W. Kent, 1919, ST. J. MARRIOTT.

1310. BIDENS TRIPARTITA L., var. INTEGRA. See *Rep. B.E.C.* 33, 1917. The Rev. E. A. Woodruffe-Peacock tells me he sowed hundreds of seeds of the Sibbertoft plant (which he thought was *cernua* × *tripartita*) in ideal conditions at Cadby but all proved sterile. "Thousands were naturally sown at Sibbertoft by the plants but not one seedling appeared at either place."

1347. ANTHEMIS COTULA L., forma LATISECTA Thell. in lit. Abingdon, Berks, 1918, G. C. DRUCE.

1362 (2). MATRICARIA OCCIDENTALIS Greene in Bull. Calif. Acad. ii., vi., 150, 1886 & Man. Bot. San Franc. Bay 208, 1904. *M. discoidea*, var. *occidentalis* Scully Fl. Kerry 152. See *Rep. B.E.C.*, 416, 1916. This differs from *discoidea* in its larger size, larger heads, and the fruits have a toothed crown. Co. Dublin, 1894, N. COLGAN; near Beal Point, Kerry, 1903, R. W. SCULLY; Aber, Carnarvon, G. C. DRUCE.

1393. SENECIO AQUATICUS Hill, var. vel forma DISCOIDEUS. Mr G. C. BROWN sent a specimen [Ref. No. 1618] from Bastwick, E. Norfolk, Aug. 1919.

1395. S. ERUCIFOLIUS L. The leaves of this species vary much in leaf-cutting, indeed Jacquin (*Fl. Austr.* iii., 42) described a species, *tenuifolius*, which notwithstanding the acute, narrow leaf-segments is now by general consent treated as a variety of *erucifolius*. This was distributed through the Club (see *Report* 573, 1916) from Birkenhead, and I have it from St Neot's, Hunts; Willesden, Middlesex, &c. There is another distinct modification chiefly found on the coast of the south English counties which I propose to call var. *subintegrifolius*, characterised by its elliptic leaves, about 6 cm. long by 12-15 mm. broad, narrowed gradually into a shaft. The leaf-margin is cut into teeth 3-4 mm. long, the apex of which is usually a little spreading. The leaves are clothed below with white bristly hairs and the upper surface is green with many, mostly reflexed, hairs. Occasionally the upper leaves are more deeply cut or slightly lobed. It differs from *latilobus* Boissier in the less deeply lobed leaves and the smaller amount or absence of the cottony hairs on the leaves and stem. It is commoner near the coast, occurring as it does in Salcombe, Devon, E. B. BISHOP; Weymouth, Dorset, 1909, &c., G. C. DRUCE. It has also been noticed on the chalk railway bank near Kimble, Bucks. It is rather curious that, like *Hedera Helix* and *Anthriscus sylvestris*, the southern form should have less deeply incised leaves than the northern plants of the same species.

Var. VIRIDULUS (Martr.-Don.) Rouy Fl. Fr. viii., 334. Characterised by being more strongly branched, with sub-glabrescent leaves which have many lobes and a less firm texture. This is perhaps an edaphic condition. I have seen it near Bagley Wood, Berks, in a shady situation. It is the f. *glabra* of the *Berkshire Flora* 294. G. C. DRUCE.

1396. S. SQUALIDUS L., var. vel forma SUBINTEGER (Druce Fl. Berks 292, 1897). This curious plant has now reproduced itself in my garden for three or four years. The leaves are entire with the margin coarsely toothed. Plants are distributed this year. The variety or mutant does not appear to be mentioned in the continental Floras. I could probably supply seeds for cultural tests. G. C. DRUCE.

1451. CENTAUREA NIGRA L., var. OBSCURA (Jord.), teste Britton. Ditcham Park, Hants, R. S. ADAMSON; Twinstead, N. Essex; Rescobie, Forfar, a form with very dark scales, G. C. DRUCE; Lower

Morden [Ref. No. 2059], Mickleham [Ref. No. 1644], Surrey; Shepperton, Middlesex [Ref. No. 1818], C. E. BRITTON.

1451. C. NIGRA L., var. NEMORALIS (Jord.), teste Britton. Cambridge, 1903; Hungerford, Berks, 1890, G. C. DRUCE, as f. *radiata*. Under this C. C. Lacaita puts the plant [Ref. No. 1766] from West Horsley, Surrey, C. E. BRITTON but rather as *C. macroptilon* Borbas —a mere individual variant. Also [Ref. No. 2006] from Sunbury Lock, [Ref. No. 2022] Headley, [Ref. No. 2058] West Barnes, and [Ref. No. 2056] Worcester Park, Surrey, C. E. BRITTON. Here too he puts R. S. ADAMSON's *pratensis* from Ditcham Park, Hants, in *Rep. B.E.C.* 147, 1914.

1451. C. NIGRA L., var. CONSIMILIS Jord., teste Britton. Glendalough, Co. Wicklow, 1901, G. C. DRUCE; Clandon Downs, Surrey, J. GROVES.

1451. C. NIGRA L., var. PRATENSIS (Jord.), teste Britton. Delapré, Blisworth, Northants, 1872; Rescobie, Forfar, 1899, G. C. DRUCE; Epsom Downs [Ref. Nos. 1971, 2, 3, 4], Surrey, 1918, C. E. BRITTON, teste C. C. LACAITA.

1451. C. NEMOPHILA Jord. Wellington College, Berks and Surrey, C. E. BRITTON.

1451. C. SEROTINA Bor. Seaford, Sussex, C. E. SALMON, teste C. C. LACAITA.

1451. C. MICROPTILON Gren. "Chiefly distinguished by its medium-sized ovoid heads with narrow lanceolate, acuminate appendages exposing the underlying phyllaries and with the appendages more or less erect but distinctly curved outwards in their upper part, this feature being more apparent on the well-formed but unopened heads. Normally *C. microptilon* is rayless and the fruits have no pappus. Billingshurst, Sussex, A. WEBSTER; Lower Morden, Surrey, C. E. BRITTON; East Hendred, Berks, J. BALL. See C. E. Britton in *Rep. B.E.C.* 507, 1918. Goring, Oxon, 1883, G. C. DRUCE.

1451. C. SUBJACEA (Beck.) Dr A. von Hayck in Fl. Stiria

Exsicc. and Die Centaurea-arten Oesterreich-Ung. in Densschr. d. Math. Nat. Cl. d. Kais. Akademie d. Wissensch. Wien 1901, 12 Lief., Dec. 1907, n. 594, teste C. E. Britton. Lewes, 1900, G. C. Druce; Hurstpierpoint, Sussex, Hilton.

1451. C. oxylepis Hayek. Tower-o'-the-Moor, N. Lincoln, F. H. Alston. Probably adventive.

1451. C. Debeauxii Gren. & Godr. Billot Exsicc. 807. [Ref. No. 73120]. Wilbury, Beds, 1905, G. C. Druce. " The only satisfactory *Debeauxii* I have seen from Britain," C. E. Britton.

1451 (2). C. vochinensis Bernh. Alien. Europe. Goring, Oxon, 1917, T. Gambier-Parry. Mr C. C. Lacaita says between this and *transalpina* Schleicher there are many intermediates. Both come under *C. nigrescens* Willd., sens. lat. (see Briq. *Cent. Alp. Marit.* 81), to which Thellung refers it.

Note.—The names of the foregoing Centaureas should be considered as tentative. Messrs Britton and Lacaita (whose views in all cases are not identical) are making investigations, the results of which will appear later on. At present Mr Lacaita rejects *pratensis*, *microptilon* and *Debeauxii*.

1459. C. diffusa × rhenana = C. Zimmermanniana J. B. Lins in Mitt. d. Bayer Bot. Ges. Bd. iii., No. 13, 282, 1916 = *C. psammogena* G. Gayer. See *Report* 37, 1917.

1477. Carthamus tinctorius L., var. inermis Schweinfurth in Muschl. Fl. Egypt. Alien. Near Glasgow, 1919, R. Grierson. Differs from the type, as its name suggests, in the absence of spines on the phyllaries and their almost entire absence from the leaves.

1645. Taraxacum vulgare (Lam.) Schrank.

In Lindman's *Svensk Fanerogamflora* Dahlstedt has described 99 species of Dandelion which he has divided into 6 groups all of which, save No. 3, Ceratophora, of which there are only two species in Sweden, are represented in Britain.

Group 1. Erythrosperma. British representatives :—(1) T. lacistophyllum Dahlst. in Bot. Not. 168, 1805. Pyrford, 1909, G. C. Druce : as a modification at Great Burgh, Surrey, 1911, W. A. Todd ; Boar's Hill, Berks, 1890, G. C. Druce. Doubtless it is the plant often reported as *T. erythrospermum* Andr. (2) T. brachy-

GLOSSUM Dahlst., *l.c.* 170. Wyrardisbury, Bucks, 1902, G. C. DRUCE; Barnes Common, Surrey, 1911, W. A. TODD.

Group 2 includes T. OBLIQUUM Fries.

Group 4. Palustria. Includes T. BALTICUM Dahlst. Menmarsh, Oxon, G. C. DRUCE. See *Rep. B.E.C.* 166, 1912, for the first British record. Very closely allied to this is a new species which I gathered in Holme Meadow, near Huntingdon, in 1908, and probably the same form from Coleman's Moor, Berks. To it Dahlstedt also refers a Surrey specimen from Chipstead Valley, 1911, W. A. TODD. For these plants Dahlstedt proposes the name T. ANGLICUM Dahlst. ined. Hunnybun distributed the Holme Meadow plant through the Club in 1910. This and *balticum* belong to *T. paludosum* (Schlecht.). (See p. 567.)

Group 5. Spectabilia. It includes (1) T. NORDSTEDTII Dahlst. Under this come some of the plants called *udum* by British botanists. It occurs at Colnbrook, Bucks, 1902; near Moulsford, Oxon, 1904, G. C. DRUCE; Ham Common, Wimbledon Common, in wet drives of wood; Worms Heath and Telegraph Hill, Surrey, 1911, W. A. TODD. (2) T. SPECTABILE Dahlst., *l.c.* 159. This is already recorded from many places but doubtless in a wider sense than Dahlstedt would allow. For instance Beeby puts under it *T. maculigerum* which Dahlstedt keeps as a distant species. To this group also belongs an interesting plant which I gathered in Glen Dole, Forfar, with Dr F. J. Smith and Mr and Mrs Corstorphine in 1916 which Dahlstedt refers to his T. FAROENSE, a plant not included in the Swedish Flora.

Group 6. Vulgaria. This contains:—(1) T. TENEBRICANS Dahlst., *l.c.* 157. Oxford, by the Cherwell, 1910, G. C. DRUCE. (2) T. HAMATUM Raunk. Dansk. Exc. Fl. ed. 2, 1906. Uxbridge, Bucks; Acton, Middlesex, G. C. DRUCE, already recorded in *Rep. B.E.C.* 327, 1913. (3) Here probably comes T. DISSIMILE Dahlst. from Great Malvern, Worcester, 1888, G. C. DRUCE. Its facies is, however, rather that of *obliquum*. (4) Also a new species allied to *T. Dahlstedtii* Lindb. f., which I distributed as N. 42 through the Club in 1915, from arable fields near Moulsford, Berks. This is a showy plant. To it Dahlstedt would also put specimens I gathered on the shingle of the Gala, Selkirk, in 1917. The stems of this form were blotched with reddish-purple. In cultivation it makes a large cabbagy plant.

1646 (4). TARAXACUM ANGLICUM Dahlst., n. sp. Humile. Folia anguste oblonga-lanceolata, in lobos paucos (2-3) partita. Lobi apicem versus majores, deltoidei, acuti, margine anteriore integri aut minute denticulati. Lobus terminalis in foliis exterioribus parvus, in interioribus magnus, sagittato-hastatus, nunc latior, nunc angustior, plus minus elongato-acutatus, integer. Petiolus cum nervo mediano purpureus. Involucrum parvum, atroviride, squamae exteriores paucae, latae, plus minus ovato-lanceolatae, laxe adpressae, breviter acutae. Calathidium parvum. (Color corollae?). Antherae polline repletae. Achaenium cum pyramide circa 3.5 mm. longum, superne aculeis brevissimis instructum, fusco-stramineum; pyramis brevis, conica; rostrum 8-9 mm. longum. Prope accedit ad *T. litorale* Raunk.; differt antheris polliniferis, squamis exterioribus brevius acutis, foliis angustioribus, lobo terminali longius protracto. H. DAHLSTEDT.

1663. TRAGOPOGON PRATENSIS L. (sub-sp. EU-PRATENSIS Thell.), forma ROSEO-MARGINATUS Thell. in Viertelj. Natf.-Ges. Zürich lxiv., 813, 1919. In some quantity on the sands between Bettyhill and Farr, W. Sutherland, July 1919, G. C. DRUCE. Det. A. THELLUNG.

1685. VACCINIUM INTERMEDIUM Ruthe. Captain W. Balfour Gourlay contributes to the *Transactions and Proceedings of the Botanical Society of Edinburgh* 327, 1919, an excellent account of the hybrid Bilberry which he and Captain Vevers found in many places on Cannock Chase. He first observed it in full flower in May 1919. In many places it grew where the ground had been disturbed and it was thought that the violent crushing or shaking together of flowering plants of the Bilberry and Cowberry might have resulted in cross fertilisation. In appearance the hybrid suggests *Myrtillus* but the round stem and evergreen leaves are significant of *Vitis-idaea*. It is entirely glabrous. The flowers are intermediate and the anthers have, says Capt. Gourlay, the conspicuous dorsal awn of *Myrtillus*, but this, as a minute awn, is present in *Vitis-idaea*. The hybrid produces fewer seeds than the parent, and its fruit lacks the flavour of either parent. It has a second flowering stage in August. Capt. Gourlay intends sowing the seeds and hopes to report on the result. In August 1919 Capt. Gourlay sent me fresh specimens from Whitmoor Common, Meer Wood and Cannock

Chase, localities all on the Bunter pebble beds and sandstone. They exhibited various modifications but were unmistakably the hybrid, but some were microphyllon forms, derived either from a small-leafed *Myrtillus* or arising from want of nutrition, probably the latter, as they came " from a dry artificial bank limiting the woody portion of the heath." Capt. Gourlay wrote in August that " in the drier areas, as on artificial banks, or when the soil is presumably very acid, the two Vaccinia produce small plants with very small leaves. Patches of *V. intermedium*, otherwise quite uniform (and therefore suggesting that they have originated in a single act of cross-fertilisation), also produce this small-leafed type locally within a perfectly normal patch." On September 8 he again wrote that he had " obtained more flowering and fruiting specimens. The fruit is usually a little longer than broad. Some, however, show longer fruit, and others again shorter. The microphyllous specimens were from the same patch as the one which always produces long fruit. On a dry bank, made artificially, is a patch about 2 yards by 1 yard which is so peculiar that it suggested a second cross between the hybrid and a Cowberry parent. On Meer Heath altogether six patches have been observed." The leaves of the microphyllon *intermedium* are about 6 by 4 mm., the type 20 by 10 mm. This small-leaved plant might possibly be *intermedium* × *Vitis-idaea*. In September, with Mrs Wedgwood and Sir Roger Curtis, I visited the place under the guidance of Captain Vevers who had also sent me fresh plants in flower and fruit. Where it grew recent military traffic had cut up the Chase. Whether this had influenced hybridity is open to doubt. It may be that, with increased access, the plants became more noticeable. When plants are at the limit of their distribution it is not unlikely that in the efforts to maintain themselves crossing between two allied species may occur. Such is, according to Sir J. D. Hooker, the case with *Sonchus oleraceus* and *asper* in New Zealand, where in Britain they rarely cross. On Cannock Chase *Vitis-idaea* is nearing its southern range. It was very satisfactory to see it growing in such quantity and so unmistakably intermediate. Its history as a British plant begins with a record on " A Curious British Plant " by R. Garner in *Science Gossip* 248, 1872. The plant was discovered by Mr D. Ball, F.R.C.S., in Maer Woods and exhibited at the Linnean Society on March 7, 1872, to illustrate a paper on a hybrid *Vaccinium* between the Bilberry and the Cowberry. The consensus of opinion at the meeting was that they were luxuriant specimens of *Vitis-idaea*. In 1887, Mr N. E. Brown identified it as *V. intermedium* Ruthe. Since then it has been found as a solitary bush on Scarmclett Braes, near Watton, where I have unsuccessfully sought it; from the gorge of the Achorn Burn, Dunbeath (Crampton *Veg. of Caithness* 1911); Coniston Old Man, Lancashire, PEARSALL and ADAMSON in *Rep. B.E.C.* 273, 1915, and Lonsdale, N.E. Yorks, HESLOP-HARRISON in *Rep. B.E.C.* 116, 1917. Attention being directed to it, doubtless northern botanists will find it in other counties. Although I have had it in mind it has never been observed by me in Scotland.

1699. ERICA VAGANS L., lusus. Mr P. D. WILLIAMS of Lanarth, Cornwall, kindly sent last September a curious variation of the Cornish Heath which he had known for ten years. The cuttings come quite true. It never really flowers, but young vegetative shoots are formed with tiny clustered leaves 1 mm. long. The peculiarity may be caused by a mite or gall but Dr. W. G. Smith, to whom I sent it, has not seen anything like it. Mr. E. W. Swanton has little doubt that a mite causes this abnormality in growth.

1754. CENTAURIUM UMBELLATUM Gilib., var. or sub-var. ELLIPTICUM. A tall, stout plant with elliptic leaves 18-20 mm. broad by 20-40 mm. long. Steephill, Isle of Wight; Kenfig, Glamorgan, a condensed form, G. C. DRUCE; Sea wall, East Mersea, 1919, G. C. BROWN; near Woodham Ferris, S. Essex, 1910; Filey, York; Hoylake, Cheshire, G. C. DRUCE.

1757. C. PULCHELLUM (Sw.) Druce, forma SIMPLICISSIMUM (Schmidt in Linnaea vii., 482, 1832) Zimm., *l.c.* v., 71, 1914. Wye, Kent, July 1919, G. C. DRUCE. Doubtless a starved state.

1762. GENTIANA VERNA L., in Cleveland. Dr. Lees (*Naturalist* 390, 1919) thinks that in Cleveland its occurrence is an "assurgence" like the *Polygala* at Grassington. In the case of *Polygala* is there any evidence to justify the statement? One might equally well call *Carex chordorrhiza* at Alltnaharra an assurgence because it has only been detected in recent times. The space of ground seen by a botanist in his explorations is very small, and it must be at the right time of the year, and in the right year, since each season has its profusion of a special plant. Why they may be so abundant one year and so rare the next is at present an unsolved problem. That the Gentian is a recent species in Teesdale or Galway can scarcely be maintained whatever its status may be in Cleveland.

1789 (6). BENTHAMIA MENZIESII (Lehm.) comb. nov. *Amsinckia Menziesii* Nelson and Macbride. Alien, Amer. bor. occ. It is, in part, the *intermedia* of A. Gray. Kilsby, Northants, L. CUMMING; Woodhall Fowl run, N. Lincs, 1919, F. ALSTON. The prominent flowers, with long orange corolla tube, make it a showy plant.

1807 (2). NONNEA VENTRICOSA (Sibth. & Sm.) Griseb. Spic. Fl. Rum. ii., 93. Alien, E. Europe. *N. alba* DC. Ovenden, Yorks, 1917, A. BATES.

1808 (2). PULMONARIA AFFINIS Jord. in Billot Arch. 322, 1854. *P. officinalis* Vill., non L. *P. saccharata* Gren. & Godr., non Mill. Alien (?), France, Belgium. Dartington Wood, S. Devon, 1919, C. V. B. MARQUAND, teste Dr STAPF.

1851 (7). PHYSALIS PERUVIANA L. Alien, South America. Bradford, York, 1919, J. CRYER.

Gen. 442 (2). PHYSOCHLAINA G. Don Gen. Syst. iv., 470, 1837.

1855 (5). P. ORIENTALIS G. Don, *l.c.* Alien, Orient. Rubbish-heap, in a cornfield, Marston, Oxford, Oct. 1919, T. GAMBIER PARRY. Probably from the Botanic Garden, where it is grown.

1882. LINARIA SUPINA Desf., var. vel lusus PELORIA. With regular, tubular corolla and 5 spurs, found with the type on Par Sands, Cornwall, Sept. 1919, G. HAYNES, vide sp.

1890. ANTIRRHINUM ORONTIUM L., var. GRANDIFLORUM Chav. Mon. 90. *A.calycinum* Lam. Enc. iv., 365. *A.elegans* Ten. Viagg. Abruzz. 175. Alien, S. Europe. Boiling Wells tip, Bristol, W. Gloster, Mrs WEDGWOOD. = var. *calycinum* (Lam.).

1892. SCROPHULARIA AQUATICA L., sub-var. FLAVO-VIRIDIS Thurston *in litt.* Flowers yellowish-green, an analagous form to

S. nodosa, var. *Bobartii* Pryor. Marsh, Talland, W. PENNYCOST; West Looe, Cornwall, E. THURSTON.

1898. MIMULUS GUTTATUS DC. The nomenclature of plants grouped under *M. luteus* L. is singularly confused. Greene (*Journ. Bot.* 4, 1895) suggested that our plant should be called *M. Langsdorfii* overlooking the fact that it was a name only cited in synonymy and therefore not now considered a valid publication. Whether or not the Yellow Mimulus naturalised in Britain is *M. luteus* awaits authoritative identification, so I retain De Candolle's name. Recently the spotted form has also become completely naturalised with us. I gathered it in Kintail, W. Ross, in 1881. It has been identified by Dr. Thellung as the sub-species *M. rivularis* (*M. rivularis* Nuttall in Journ. Act. Philad. vii., 47, 1834) forma *variegatus* (Loddiges) Voss. *M. variegatus* Lodd. Bot. Cabinet t. 1872. The common form has flowers with rich marone blotches on a yellow ground, but at Glen, Peebles, it occurs as a form with bright red or dark red blotches on the corolla forming a very ornamental plant. Mr and Mrs Corstorphine have also seen it at Clatterin' Brig, Kincardine, with flowers nearly half the usual size coloured a deep orange.

1906 (5). VERONICA SPURIA L. Alien, Central and Eastern Europe. Hortal. An escape from cultivation at Thornton, N. Lincoln, 1918, F. H. ALSTON. Det. A. THELLUNG.

1929 (2). V. ORIENTALIS Miller Gard. Dict. 10, 1768. Alien, Asia Minor, Persia. Hortal. Levenhall, Edinburgh, 1916, J. FRASER. Det. A. THELLUNG.

1934 (3). EUPHRASIA HIRTELLA Jord. ex Reut. in Compt. Rend. Soc. Haller iv., 120, 1854-6. Llanberis, Carnarvonshire. See H. W. PUGSLEY in *Journ. Bot.* 173, 1919. Wettstein's description is " Caulis erectus, strictus, robustus, rarius tenuis, simplex vel in parte inferiore ramis nonnullis 3-25 cm. altis rubescens vel fuscescens, pilis crispis albidis eglandulosis vel glandulosis articulatis immixtis pubescens. Folia infima caulina cuneato-ovata obtusa dentibus obtusis paucis et caetera opposita, superiora ovata vel fere orbicularia, acuta utrinque dentibus acutiusculis 3-6. Bracteae suboppositae fere orbiculares vel orbiculari-triangulares acutae dentibus utrinque 5-8 acutis vel acuminatis plerumque imbricatae calyces tegentes in speciminibus siccis nervis subtus prominentibus. Folia et bracteae setis albidis et pilis glanduliferis longis articulatis micantibus dense obsita raro solum glabrescentia. Spica initio condensata, et post anthesin non valde elongata, in parte superiore semper densissima rarius elongata. Calyx indumento ei foliorum conformis, fructifer vix accretus. Corolla parva, 5-7 mm. longa, labio superiore bilobo lobis denticulatis, labio inferiore trilobo, lobis emarginatis angustis. Corolla albida, striis violaceis et macula lutea in fauce picta. Capsula ovata vel lineari-ovata calycem aequans, margine longe ciliata, caeterum in parte superiore setulis sparsis obsita. Exsicc: Schultz 1188, 2570 (Brandisii Billot 2332, bis & ter). Distribution: Spain, France, Switzerland, Italy, Austria, Hungary, Bosnia, Rumelia, Russia, eastwards to Mongolia. Wettst. *Mon.* 175. He groups it under the Parviflorae. In company with Miss Eleonora Armitage, Mr D. A. Jones, Mr J. A. Wheldon, and others I gathered this at Llanberis in August. Rouy (*Fl. Fr.* xi., 149) puts it as a race (glanduleuse) of *Tatarica* and under it, as a less hairy and less glandular variety, *brevipila*. *Stricta*, he considers another race of *Tatarica*. Rouy's description is:—Stem branched below, the branches patent ascending with short crisp hairs, glandular or not glandular; leaves strongly pubescent with long stipitate glands, the lower ovate-cuneiform, obtuse and with obtuse teeth, the upper broadly ovate, with 6-12 broad and sub-acute teeth; bracts usually ovate-suborbicular, with 8-14 pointed or acuminate teeth: spike rather elongate; calyx glandular-pubescent with elliptic-pointed teeth; corolla medium sized, 6-11 mm.; capsule equalling the calyx.

1939 (2). E. CONFUSA Pugsley in Journ. Bot. 172, 1919. To this name Mr Pugsley assigns the Exmoor, Somersetshire, *E. minima*. On the other hand, Dr. Ostenfeld considers the British *scottica* to be only a form of *minima*. Mr Pugsley also, and doubtless correctly, rejects Bucknall's var. *arbuscula* as a var. of *minima* or *confusa*.

1946 (2). BARTSIA LATIFOLIA Sibth. & Sm. Fl. Graeca vi., 69, t. 586. *Trixago latifolia* Reichb. *Eufragia latifolia* Griseb. Alien. S. Europe. Boiling Wells tip, Bristol, W. Gloster, Mrs WEDGWOOD.

2004. ORIGANUM VULGARE L., lusus. Mr C. F. Vincent sent from Torquay plants of this species in which the corollas were entirely abortive.

2009 (2). SATUREIA MONTANA L. Alien, Europe. On Dec. 3, 1919, Mr J. Cosmo Melvill sent me a specimen which he had gathered on Oct. 12 on the ruined cloisters of Beaulieu Abbey, S. Hants, quite naturalised. This at once recalled to my mind an immature Labiate which I saw there in the early part of 1910, and of which I brought back a root. It, however, died off. The smell told me it was not Hyssop and I thought it was a *Micromeria*. But the matter slipped out of my memory. Its naturalised occurrence here instead of being merely a casual as in Sussex (*Rep. B.E.C.* 350, 1908), demands an asterisk to its name. That it is of no recent introduction is proved by a specimen of it, labelled *Hyssopus*, in Miss C. E. Palmer's collection, gathered on Sept. 20, 1900. According to Rouy (*Fl. Fr.* xi., 313) this Beaulieu plant comes under his variety RIGIDULA (Jord. & Fourreau Ic. 38, t. 104), characterised by "Grappes allongées, élancées, lâches, étroites; feuilles longement linéaires-lancéolées; fleurs plus petites; tiges élevées, grêles mais raides." Jordan & Fourreau make no mention of the size of the flowers nor is their figure of the flower smaller than in *brevis*. Their *provincialis* and *flexuosa* to the latter of which Dr Thellung would refer the Beaulieu plant, are closely allied and critical forms.

2023 (3). SALVIA BERTOLONII Visiani Fl. Dalm. ii., 189. Alien, S. Europe, Adriatic, etc. Ware, Herts, 1904. Nearly allied to *pratensis* but a more scabrid plant with smaller corollas, leaves cordate at base, and branched racemes. It is kept as a distinct species by Archangeli. G. C. DRUCE.

2031 *b*. S. VERTICILLATA L., var. PULCHRA mihi. Alien, Europe. This occurred in the gravel pits at Ware, Herts, in 1907. It differs from the type in its much smaller leaves which are of a much firmer texture, and more regularly and neatly crenate, and in the stems being of a bright amethystine or even bluish tint. The leaf-blade measures 30 to 45 mm. by 20 to 30 mm. In the type they often reach 1.20 cm. by 80 mm. G. C. DRUCE.

2035 (4). NEPETA GRANDIFLORA M. Bieb. Fl. Taur. Cauc. ii.,

42. Alien, Caucasus. Salisbury Crags, Edinburgh, 1919, A. Templeman, teste A. Thellung.

2091 (4). Plantago Loeflingii L. Alien, Central Spain, Canary Isles, North and West Africa. Ovenden, York, 1917, F. Pullan, ex C. H. Horrell.

2114 (2). Amaranthus ascendens Loisel. Not. Pl. Fr. 141, 1810. This is the *A. Blitum* as figured in *Eng. Bot.* t. 2212, 1810. Specimens are in my Herbarium (teste Thellung) from Turnham Green, Middlesex, 1876, T. R. Sim, but there are also specimens collected from that area by Dillenius in 1724.

2116. A. lividus L., var. polygonoides (Moq.) Thell. in Asch. & Graebn. Syn. v., 320, 1914. *Euxolus viridis*, var. *polygonoides* Moq. Alien, tropics. In cultivated fields about London, circa 1822, W. Blake in *Hb. Druce*. Det. A. Thellung. This is not the *A. polygonoides* L. (see Thellung, *l.c.*, 351). It is found in the tropics of both hemispheres and adventitiously at Hamburg, Hanover and Strasburg. In Britain it has occurred in Middlesex.

2131. Chenopodium Berlandierii Moq., var. platyphyllum Issler. St Philip's, Bristol, 1916, G. C. Druce; Galashiels, Selkirk, 1917, Miss I. M. Hayward. This, as its name suggests, has broader and larger leaves than the type. It bears some outward resemblance to *opulifolium*, but the base of the leaves is less rounded. The young leaves are often pale purplish in tint, especially at the base.

2138. C. Vulvaria L., forma rhombicum Murr. Waste ground, Bradford, 1918, J. Cryer. Det. A. Thellung. The leaves have a curious rhombic outline, hence the name.

2210 (12). Rumex magellanicus Griseb. in Goett. Abh. vi., 118, 1854. Alien, Magellan area. Glasgow, 1919, R. Grierson. Named at Kew.

2228 (2). Euphorbia virgata W. & K. In the *Report*, 308, 1918, attention was drawn to this species as having been passed over for *E. Esula* L. and it was stated that other plants named *Esula*, besides those from the localities given, will have to be transferred to *virgata*.

Among these Dr Thellung says are the *E. Esula* from Redbrook, Monmouth, A. LEY, sent to, but not commented on, in the *Report* 1904; railway bank near Loch Spynie, Elgin [Ref. No. 2184], E. S. MARSHALL; *Euphorbia* sp. from Littlemore railway-side, Oxon, 1917, G. C. DRUCE, which in the *Report* 308, 1907, was named *Esula* by A. B. Jackson, C. Bucknall and E. S. Marshall, and *E. mosana* by E. F. Linton; Marcham, Berks, as *Euphorbia* sp. G. C. DRUCE, which Bucknall thought (*Report* 309, 1902) to be the same as the Littlemore plant. Both were without fruit. Subsequently I thought both belonged to the var. *lutescens* Huth. Banks of the Thames between Wallingford and Cholsey as var. *Pseudo-cyparissias* R. F. TOWNDROW (*Journ. Bot.* 400, 1900); railway-side, Slough, Bucks, 1900, G. C. DRUCE; Marnhull, near Blandford, Dorset, Lady DOUIE, who in painting it thought it to be untypical; Caversham, Oxon, 1918, V. MURRAY.

Forma ESULIFOLIA Thellung. See *Report* 308, 1918. This is the *E. Esula* L. (see *Fl. Berks* 437) from the Bucks side of the Thames near Hambledon, now extirpated and the ground built over, and from the Avon side near Evesham, Worcester, 1916, J. LAMB.

It may be added that the only British specimens as yet passed as *Esula* are Sparham, Norwich, 1890, F. J. HANBURY; Melrose Bridge, Roxburgh, 1915, Miss I. M. HAYWARD (see *Adv. Fl. Tweedside* 288), and possibly H. BROMWICH's specimen from railway-bank, Leek Wootton, Warwick, 1869.

2230. E. CYPARISSIAS × VIRGATA Schroeter in Ber. Zürch. Bot. Ges. 13, et 81-90, 1917. This hybrid occurs in several parts of Switzerland—Greifensee, Zürich; Branson, Wallis, Tübach, St Gall; Kiesgrube in Basel-Land, and also at Hanover with *virgata*. Dr Thellung, with some slight doubt, identifies a plant in my herbarium collected by Lady Muriel Percy in 1908 near Alnwick, Northumberland, and named *Esula*, as this hybrid.

2250. URTICA DIOICA L., f. PURPURASCENS mihi. Lanarth, Cornwall, Oct. 1919, P. D. WILLIAMS. The leaves are suffused with violet-purple.

2260. CORYLUS AVELLANA L., var. CONTORTA. Tortworth, W. Gloster, Earl DUCIE. See *My Garden*, Bowles.

2316. HELLEBORINE VIRIDIFLORA Wheld. & Trav., forma VECTENSIS T. & T. A. Steph. (forma DUNENSIS is the Southport type plant) in Journ. Bot. 1, 1918. Ventnor, Isle of Wight. Rolfe (*Orch. Rev.* 183) says "the significance of the variations is not clear and *viridiflora* is usually considered to be a sub-species of *latifolia*."

2325 (2). ORCHIS PRAETERMISSA L. This year I had many opportunities of seeing this plant over wide areas. Conducted by Mr Arnett, Mrs Wedgwood and I saw it in two or three places near Tenby, Pembroke. I also saw it in many marshes between Tenby and Fishguard, Narberth, &c. In one marsh it grew with *O. incarnata*, then going out of flower, and hybridised with it. There too grew *O. Fuchsii* and *O. maculata* with which it also hybridised. Mr Attenborough sent it me in flower from St Ouen's Pond, Jersey (it was not in flower when I was there in the spring), and as a slightly different form from the Quenvais. I gathered it also in marshes near Kingscliffe, Northants, and Mr Boys sent fresh specimens from N. Somerset. By the White Water in Northants it is an abundant and luxuriant plant, there hybridising with *Fuchsii* and *incarnata*. In our Oxford marshes it was abundant this season, and I found it in good condition in a new locality in a marsh in an unwooded portion of Wychwood Forest. Mr Gwatkin sent a specimen from Totland Bay, Isle of Wight, and I saw it with Miss Hersie Butler and Sir R. Curtis in great luxuriance at Rudley Marsh, S. Hants, where it hybridised with *Fuchsii*, *maculata* and *incarnata*, all these being present with it. In marshes in Brecon it was locally common and hybridised with *maculata*. I also saw it in Radnor, Carmarthen, Monmouth, Hereford, Gloster and Cardigan. Mr Dymes sent a specimen from Middlesex where it hybridises with *maculata* agg., and grows with *incarnata*. I also saw it in Carnarvon, Anglesey, here hybridising with *maculata*, and Stafford. Miss Cobbe sent it from Morfa, Merioneth; Mr Rilstone from Lambriggan, Cornwall; Mr Hurst from the Kennet Meadows, S. Wilts, near Stype Wood; and Mr Greenwood from the neighbourhood of Cirencester where it crosses with *Fuchsii*. Mr J. E. Little also forwarded it from several Norfolk Fens such as Foulden, Shingham, Caldecote, Beechamwell and Oxborough where it was predominant or almost exclusively representated. At Marham Fen, W. Norfolk, it hybridised with *incarnata*. Near Stoke Ferry and Caldecote it certainly hybridised with

Fuchsii and that combination was present in plants sent by Mr Little. Other specimens came from Chilton Foliat, N. Wilts, and W. Drayton, DYMES, Shapwick peat-moor, N. Somerset, MARSHALL, *in litt.* The Rev. T. STEPHENSON also told me he saw it in several marshes near Tenby, Pembrokeshire, and that he found it 12 inches high at Penally, with " '*latifolia*' which was 2 feet high, the leaves being heavily spotted or faintly blotched " (this tall plant is doubtless my *praetermissa-Fuchsii*). I saw splendid plants near Haverford West in the same county. The diagnoses of these plants in the field is not difficult. The result of seeing many thousands of specimens is (1) to convince me of the specific value of *praetermissa*, (2) that I have seen no constant intermediate species between it and *maculata* agg., although the tall plant with strongly marked leaves, paler flowers, and robust growth is doubtless the *latifolia* of most British authors. I have yet to be convinced it is not one of the many hybrids and probably the first cross of *praetermissa* and *maculata* agg.

Another variation of *praetermissa* is now to be considered. For this I suggest the name of PULCHELLA (see *Gard. Chron.* 1920), either as a variety, sub-species or species, whichever grade it may have to take. With our present knowledge I now call it a variety. Description :—Plant from 10-30 cm., stem hollow ; leaves erect or ascending, usually narrowing upwards, often keeled, rarely widest above the middle, about 18 mm. wide at the broadest part, in an exceptionally robust plant 26 mm. wide and 15 cm. long exclusive of sheath, unspotted and usually light green ; inflorescence 25-70 mm. long with bracts as long or sometimes longer than flowers, sometimes narrow, rarely broad and conspicuous ; flowers showy, of bright tints of purple, purplish-rose, dark bluish-purple, rarely pale rose or white ; labellum smaller than *praetermissa*, from 6-12 mm. broad, broader than long, *e.g.*, 8 x 11, 8 x 10, 5 x 7, with the small central lobe as long or longer than the broad side lobes which are often angled or notched along their margin, often marked with darker and sometimes well defined lines, confluent dots, or hieroglyphics. This I have from Killington Common, Westmorland, A. WILSON ; Frith, Orkney, HALCRO JOHNSTON ; Lomonds, Fife, TEMPLEMAN ; Moy, Aviemore, Easterness ; Avoch, Black Isle, Bonar Bridge, Strathpeffer, &c., E. Ross ; Cnochan, &c., W. Ross ; Inchnadamph, Elphin, Tongue, Farr, Altnaharra, West Sutherland ; Scarmclett, Watton, near Wick, &c.,

Caithness; near Bonar Bridge, Dornoch, E. Sutherland, DRUCE; Carngaroo Hill, Co. Down, STELFOX. Often in great abundance and an adornment of the marshes of the northern counties. *O. praetermissa*, var. *pulchella* × *maculata* Scarmclett, Wick. Caithness; Elphin, Tongue, W. Sutherland; Avoch, Strathpeffer, E. Ross. To this combination I suspect the Ambleside *cruenta* belongs. *O. incarnata* var. *pulchella*, from the New Forest, has an even smaller labellum which is more reflexed and less cut than the northern plant. To this formerly I referred the Hamworthy plant. It is possible that further study may result in uniting both these forms under *praetermissa* and therefore I have selected the same name for the northern plant, but definitely making it subordinate to *praetermissa* as it is distinctly in closer alliance with that than *incarnata* under which for the time I leave the Hants and Dorset plants. I have long doubted the correct identification of the Lake District *cruenta* (*Journ. Bot.* 37, 1899) and suggest it may be a hybrid of *pulchella* and *maculata* agg., but there is another plant in Teesdale which may be a distinct form. Lindman makes *cruentus* a sub-species of *incarnatus*.

2325. O. LATIFOLIA L. My friend, M. Alban Voigt, has sent me from San Giacomo Val Moesa, at 3,800 feet, and from the Ueschinen Valley, Kandersteg, Switzerland, specimens so labelled, with hollow stem, very strongly spotted leaves, the lower 40 mm. by 22 mm. the third leaf 70 mm. by 30 mm., narrowed at both ends, and broadest in the middle. The first plant has inconspicuous bracts, the second long leafy bracts slightly exceeding the flowers. They appear different from our hybrid. M. Voigt speaks of them as rare, and says, " I am inclined to think the species is kept up as a tribute of respect for Linné . . . . I have never seen *latifolia* here [Tessin] and Chenevard gives in his *Cat. Pl. Vasc. du Tessin* only three localities in Soltomeri and then only on the strength of literature dating from 1857. The local herbarium contains no specimens and ten other herbaria consulted by Chenevard were also without a representative of it and he himself only collected it in four localities in northern Tessin." Prof. Lindman tells me *Orchis latifolia* is rare in Sweden and has little hope of sending it in a fresh state. The plant of the Linnean Herbarium is very near to fresh specimens sent from Aarau, Switzerland, by Dr Keller.

2326. O. INCARNATA L., vera. Foulden Fen, Marham Fen, W. Norfolk, LITTLE; Rudley Marsh, S. Hants; Tenby, Pembroke, DRUCE; Llandrindod, Radnor, TODD; Oakhill, Froxfield, N. Wilts, HURST; Linton, Peebles, TEMPLEMAN; Strathpeffer, E. Ross, DRUCE & WEDGWOOD; Killington, Westmorland, WILSON. Var. *ochroleuca* Wüst. Still at Fleet, Hants, Mrs GIBSON.

2327. O. MACULATA L., vera (ERICETORUM). There is no doubt of the preference this has for acid soils, therefore it is essentially the west of Britain plant from Cornwall to the Shetlands. It exists under various modifications. Lady Mexborough sent small specimens from near Helmsley, York (the *praecox* Webster) with pure white flowers (*albiflora*); Bangor, Co. Down, STELFOX; Tongue, W. Sutherland, DRUCE, with deeply cut labellum; Llandrindod, Radnor, Miss TODD, this perhaps crossed with *Fuchsii*; Middlewick Bog, Colchester, BROWN.

To *maculata* belongs a striking plant, the var. *macroglossa*, var. nov. Flowers very large, pale, with dark lilac markings, the labellum 18-22 mm. broad by 10-12 mm. long, the side lobes much larger than the central lobe which may be shorter, as long, or very slightly longer than the lateral. In other characters the plant is typical. Bogs at Llandrindod, Radnor, Miss TODD; near Harlech, Merioneth, Miss COBBE; near Moreton, Dorset, DRUCE.

2327. O. FUCHSII Druce. Tenby, Pembroke, ARNETT & STEPHENSON; Middlewick Range, Colchester, BROWN. These are robust plants, nearly two feet high, with solid stem and not, I think, crossed, although growing with *praetermissa* or its variety. This strong plant is often named *latifolia* in herbaria, the leaves being broad, and broadening upwards, strongly spotted, and the lower bracts somewhat conspicuous. A very dark purple form (*purpurascens*), sent by Mr P. B. O'Kelly from Ballyvaghan, Co. Clare, was thought by him to be a distinct species, another, which he calls *lilacina*, exists there as does *O'Kellyi* in millions. Forma *insignis*. Sent from Winchester Downs by Mr B. W. Thomas, with very dark purple lines.

2344. CYPRIPEDIUM CALCEOLUS L. The first record is stated by F. Arnold Lees (p. 341) to be Parkinson's somewhat incorrect statement (*Theatrum* 1640) from marshes about Arncliffe, but the plant does not grow in wet places. Dalton gathered it in Grassington Wood in 1797 and it has been found there recently. *Naturalist*, Oct. 1919.

Gen. 576 (2). STERNBERGIA Waldst. & Kit. Pl. Rar. Hung. ii., 172, 1805.

2380 (10). S. LUTEA Ker-Gawl., ex Schultes Syst. vii., 795. *Amaryllis lutea* L. *Operanthus luteus* Herbert. Alien, S. Europe. Slopes of Mont Orgueil Castle, Jersey, April, 1919. In company of Mr T. Attenborough and the Countess Fortescue last April I noticed growing there quite naturalised and in considerable quantity the leaves of a bulbous plant. The custodian, who had brought a large number into his garden, said it produced beautiful yellow flowers in the autumn. There seemed little doubt that ' the yellow crocus,' as he called it, was really *Sternbergia* This was proved in October by Mr Attenborough kindly sending it to me in flower. It appears to be the first instance of its occurring naturalised in the British Isles. It was doubtless originally cultivated in the Castle garden. G. C. DRUCE.

Gen. 589 (2). CHIONODOXA Boiss. Diagn. ser. I, v., 61, 1844.

2408 (10). C. NANA Boiss. and Heldr. Diagn. xiii., 24. Alien, Crete. Several plants in a woodland in the parish of Oare, Somerset, March 14, 1919, ex W. P. HIERN.

2431. JUNCUS BALTICUS Willd., var. PSEUDO-INUNDATUS A. & G. Small specimens on Dornoch Links, E. Sutherland, G. C. DRUCE. Mr Adamson suggested the varietal name.

2467. ARUM ITALICUM Mill., var. IMMACULATUM DC. Fl. Fr. v., 303. The English plant always lacks the white veins on the leaves so characteristic a feature of the plants of S. Europe. In the Channel Isles both forms occur, as they also do (teste Syme *Eng. Bot.* ix., 16) at Monaco.

[2488. × POTAMOGETON ANGLICUS Hagström Crit. Res. 180 = *P. coloratus* × *polygonifolius* Hagstr. Woking Heath, Surrey, *Hb. Bennett*. This is the only place as yet from which Hagström has seen this hybrid. The apparent absence from Surrey and the long distance of the Kent and Berkshire habitats for it is against the diagnosis. Mr Arth. Bennett (*Journ. Bot.* 12, 1919) states that the plant has no *coloratus* in it so that *anglicus* need not be added to our list.]

2499. P DECIPIENS Nolte, var. BREVIFOLIUS Hagst. Crit. Res. 244. Mr W. H. Pearsall identifies my plant from Rescobie, Forfar, as this. It was gathered with Mr John Knox in 1882.

2502. P. PERFOLIATUS L., var. MACROPHYLLUS Blytt. Abergavenny, Monmouth, 1897, C. BAILEY, as *perfoliatus*, of which it is a large-leaved form, not a true variety.

2503. P. CRISPUS L., var. OBTUSIFOLIUS Fieber. Hagst. *Crit. Res.* 60. Mr Pearsall identifies a plant in my herbarium from Caynton, N. Salop, coll. Bidwell, 1832, as this. It is curious that while reducing *P. interruptus* which so many botanists considered a distinct species Hagström should use the heaviest type for these mere leaf-varieties. It is true that immediately after he says "other forms" are *cornutus* Linton which again is put in heavy type. The earliest trivial for that plant is, however, *P. macrorrhyncus* (Gandoger) and it is used in a varietal sense by Asch. & Graebn. The name *cornutus* is also used as a var. of *lucens*. *Obtusifolius* is the *genuinus* of Reichb. Ic. 18, 1845 and is said to be the commonest plant in Swedish herbaria.

2508. P. PANORMITANUS Bivona ex Bivona A. ined. 6, 1838, ex Gussone Fl. Sic. Syn. i., 207, 1842. *P. gracilis* Fries Nov. Fl. Suec. 50, 1828, not of Wolfgang. This has been confused with *P. pusillus* or else treated as a variety, race or proles of it. It differs from *pusillus* in its lighter, more yellowish green colour. In habit it is more like *rutilus*, stretching itself elegantly upwards, whereas *pusillus* is of a darker green or brownish tint and expands into a bush-like growth with copious branches in the upper part if there is space. *P. panormitanus* stretches the upper internodes of the stem to the necessary length but never prolongs by branches of several ranks distichously. Usually there is in the axil of the upper involucral leaf a very short spike-bearing branch. *Pusillus* projects from the primary two involucral leaves long branches which in their turn shoot out branches of the second rank and so on. The stem is terete or faintly compressed. The leaves are stiffer than *pusillus* owing to their strong midrib. *Panormitanus* never has the large celled lacunae along the midrib so the leaves lack the 1-2 light stripes of *pusillus*. The great distinctions, however, are in the stipular sheaths and in the shape and occurrence of the turios. *Panormitanus* has most gracile and small buds, 12-15 mm. long. The ligules are connate for more than two-thirds of their length, in *pusillus* they are open but convolute. Although contrasted with *pusillus* Hagström separates them by 14 species and many hybrids. Indeed *obtusifolius* comes as an intervening species. He divides his subsection *Pusilli* into two sections.

(*a*) Stipules connate, ochreate, not plicate. Leaves acute, ± longly cuspidate or gradually attenuate, at the most rigid . . . *rutilus*, *mucronatus*, *panormitanus*.

(*b*) Stipules split, convolute. Leaves ± obtuse, ± wide, less pointed . . . *pusillus*, *obtusifolius*.

Panormitanus is likely to be found in many places in Britain. Plants gathered at Marsh Gibbon, Bucks; Peakirk, Eye, Northants, 1909, Wolverton, Norfolk, G. C. DRUCE; Southill Park, Beds., J. E. LITTLE; Kennington Lane, Berks, 1893; Marden Park, Kent [Ref. No. 1097], E. S. MARSHALL; Brograve Level, Norfolk, C. E. Moss in *Rep. B.E.C.* 599, 1910; Odiham, N. Hants, 1918, Mrs WEDGWOOD; Clapham in Craven, York, MENNELL; Brickpond, York, A. WEBSTER; Aberarth, Cardigan, E. S. MARSHALL; Loch Beg, Blairgowrie, E. Perth, A. STURROCK; Loch of Kirkbister, Orkney, 1878, HALCRO JOHNSTON, have all been passed by Mr Arth. Bennett but Mr Pearsall queries the Loch Beg, Aberarth, and Kennington Lane specimens.

2508. P. PANORMITANUS × PUSILLUS = × P. DUALIS Hagström Crit. Res. 103. Ponds near York, 1881, ARTH. BENNETT; Salop, 1886, W. E. BECKWITH in *Hb. Stockholm*.

2512. P. PECTINATUS L., var. UNGULATUS Hagström Crit. Res. 45. This is divided into 7 forms of which *subaequabilis* is recorded from the " River Leen, MITCHELL " which probably refers to the tributary of the Trent in Notts and f. *latiusculus* from Benwick, Cambridge, FRYER. Mr Pearsall also identifies *ungulatus* in my herbarium from Skinner's Lock, Berks & Oxon; Portmeadow, Tadpole, etc., Oxon; the Wantage Canal, Berks; King's Sutton, Cherwell, Oxon, & Northants, G. C. DRUCE; Wye, Guildford, Surrey, W. H. BEEBY.

2512. P. PECTINATUS L., var. DIFFUSUS Hagström Crit. Res. 47. Mr Pearsall identifies the following as this var. in my herbarium:—Penzance, Cornwall; Brean and Bridgwater, N. Somerset, 1882; Easton, Isle of Wight; Southall, Middlesex; Odiham, Hants, 1882, C. E. PALMER; Southill, Beds., J. E. LITTLE; Marston, N. Wilts; Ross, Hereford, PURCHAS; Sellack, Hereford, LEY; Longford, Warwick, 1853, KIRK; Chadshunt, Warwick, C. E. PALMER; canal, Warwick, BAKER; Great Yarmouth, E. Norfolk, 1852, TRIMMER; Eye, Oxney, Lode, Northants, Preston, Salop, 1838, BIDWELL; Cirencester, Gloster; Droitwich, Worcester, BAGNALL; Duddingston Loch, Midlothian, 1883; Loch Spynie, Elgin; Heriot, Roxburgh; Forfar, G. DON. Of this Hagström has a forma *scoparius* attributed to Wallroth who probably, however, called it a variety. It is in *Herb. Upsala* from Warwick, BABINGTON, who, however, called it his *flabellatus*. In my herbarium are plants (teste Pearsall) from Crouch, Essex; Chatteris, Cambridge, FRYER; Oxbridge, Glamorgan; Birkenhead, Cheshire. Forma *interruptus* (*P. interruptus* Kitaibel). Hagström makes this synonymous with Babington's *flabellatus* and he cites it from Stoke Heath, Warwick, T. KIRK. Pearsall also names plants thus in my herbarium from Mepal, Cambridge, FRYER; Cromford Canal, Derby, BAILEY; Lady Island, Lake Wexford, etc.

2545. SCIRPUS COMPRESSUS Pers., var. ERECTUS Uechtr. Asch. & Graeb. Syn. ii., 2, 229, 1903. Culmis rigide erectis ad 40 cm. altis. Perranporth, Cornwall, F. RILSTONE; River Greeta, Wrayton, W. Lancs. 1901, A. WILSON (see *Rep. B.E.C.* 28, 1901); Chilton Foliat, Berks, G. C. DRUCE. This gradually merges into the type.

Gen. 632 (3). MARISCUS Gaertn. Fr. i., 11, 1788.

2556 (20). M. CYPERINUS Vahl Enum. ii., 377. Alien, India, China, Japan, etc. Bradford, York, 1918, J. CRYER. Named at Kew.

2653. PHALARIS MINOR Retz., var. INTEGRA Trabut. Alien, N. Africa. Leith, Edinburgh, J. FRASER.

2682. MIBORA MINIMA (L.) Desv., forma VARIEGATA (F. Zimm.) Thell. & Zimm. Fedde *Report* 370, 1916. Spiculis partim (praesertim inferioribus) viridibus, partim purpurascentibus. Coron. Anglesey; St Ouen, Jersey, G. C. DRUCE.

Gen. 673 (4). GYNERIUM Humb. & Bonp. Pl. Aequin. ii., 112, t. 115, 1809.

2732 (26). G. ARGENTEUM Nees Agrost. Bras. 462. Alien, Brazil. In a swampy place, St Catherine's, Jersey. First noticed there in 1906. G. C. DRUCE.

2759. POA PRATENSIS L., var. LATIFOLIA Weihe Deutsche Gräser 31. Reichb. *Agrost. Germ.* clxi., n. 415, 1650. Rouy describes it as a more robust plant of a clearer green with leaves 5 mm. broad. This is the plant [Ref. No. R. 4774] sent to the Club in 1918. (*Report* 531). Lindman considers it to belong to his forma LATIFOLIA. It occurs under walls by roadsides and I have seen it at Chichester, Tenby, Oxford, Cothill, &c., G. C. DRUCE.

2759. P. PRATENSIS L. (ANGUSTIFOLIA), var. COLLINA Schur Nat. v. Siebenb. iv., 88. Weston-on-the-Green, Oxford [Ref. No. R. 1611]. See *Rep. B.E.C.* 531, 1918. G. C. DRUCE.

2769. P. ANNUA L., var. PERENNIS. Differs from the type in its more creeping and perennial growth, possibly educed by the high alpine habitat (the summit of Snowdon). (See *Report* 140, 1911.) This may come under Haussknecht's var. *reptans* but the stems are neither slender nor long, nor are the stolons elongate.

2850 (3). HORDEUM COMOSUM J. & C. Presl Rel. Haenke i., 327. Alien, Chile (*Ind. Kew*), S. Africa (Thellung). Bradford, York, J. CRYER, teste A. THELLUNG.

2933. NITELLA FLEXILIS Ag., var. FRYERI Groves & Bullock-Webster in Journ. Bot. 102, 1919. *N. flexilis*, var. *nidifica* Groves Charac. Brit. Exsicc. n. 59. Old Bedford and near Sutton Gault, Cambridge; West Norfolk, Hunts. Fryer showed me this in situ shortly after he found it.

2933 (2). N. SPANIOCLEMA Groves & Bullock-Webster in Journ. Bot. 1, 1919. Discovered by Canon Bullock-Webster in Lough Shannagh, Donegal, in 1916.

2937. N. MUCRONATA Miq., var. GRACILLIMA Groves & Bullock-Webster in Journ. Bot. 323, 1917. Distributed through the Club in 1918 by J. Walter White from Rangeworthy, Gloster. This differs from the type " in having the penultimate cell of the terminal branchlet-rays gradually narrowed to the apex instead of being rounded so that the ultimate cell does not form the small mucro-like appendage which gave rise to the specific name. In this respect and in being more slender it resembles *gracilis*." J. Groves *in litt.*

REVIEWS AND NOTES ON PUBLICATIONS, NEW BOOKS, ETC., 1918-1919.

(*Owing to exigencies of space much material has had to be omitted. The issue of Botanical Abstracts* (*see p.* 587) *will, however, render these less necessary.*)

ADAMSON, R. S. Notes on the Flora of Northern Cheshire in Journ. Bot. 91, 1919. Adds *Potamogeton praelongus* and confirms *Ceterach* for the county. There are, in addition, some new varieties and adventive plants.

ADAMSON, R. S., and CRABTREE, ALISON M'K. The Herbarium of John Dalton. Reprint from Mem. & Proc. Manchester Lit. & Phil. Soc. May 19, 1919. The collection, now in eleven vols., has been in the possession of the above Society since 1886. It was made between the years 1790 and 1829. It is arranged according to Withering's *Arrangement of British Plants* and contains 864 different species besides 72 non-vascular Cryptogams. There is a specimen of *Cypripedium Calceolus* from Arncliffe. Three specimens are included of plants not now admitted as natives, *i.e.*, *Potentilla alba*, *Helianthemum ledifolium*, both supplied by Robson who had a "Botanic Garden," and *Euphorbia Characias*, from Melbury Heath.

Gloster, which the authors unhesitatingly identify as *amygdaloides*. Dalton's specimen of the latter species is *Cyparissias* and like so many others, including *Ajuga genevensis* and *Cerastium tomentosum*, is of garden origin. The authors have done their work well.

ARMITAGE, ELEANORA. Madeira and its Flora. A paper read before the Liverpool Botanical Society on March 27, 1919. There are said to be 772 indigenous and 156 introduced flowering plants, 41 ferns, 150 bryophytes and 145 lichens. 106 species are endemic. I had the pleasure of meeting Miss Armitage when she was botanising in Madeira, and many pleasant memories have been recalled in reading this pleasing address.

ASCHERSON & GRAEBNER. SYNOPSIS DER MITTEL-EUROPAISCHEN FLORA. Lief. 95. Caryophyllaceae. Leipsic, Borntraeger, pp. 705-84, 1918.

BEAN, W. J. Abraham's Oak (*Quercus palestina*) in Kew Bulletin 233. The London Plane (*Platanus orientalis* × *occidentalis*). A discussion of Prof. Henry's suggested origin of the London Plane which is said to have originated in the Oxford Botanic Garden. Gard. Chron. ii., 47, 1919. See also A. D. Webster, 72, 1919, who is not convinced of its hybrid origin.

BIGWOOD, GEORGE. COTTON. pp. 204, 1918. Constable & Co.; 6/6. One of the Staple Trades and Industries Series, edited by Gordon D. Knox. A brief history of the Cotton plant is first given, then the development of spinning. The third chapter treats of the cotton fields. As much as nine-tenths of the clothing of the world is said to be made of this fibre. The triumphs of mechanical invention show how the difficulties connected with its manufacture have been overcome. There are some excellent photographs and the volume contains much valuable information.

BONAPARTE, PRINCE ROLAND. Notes Pteridologiques. Fasc. vii., p. 418, 1918; viii., 1919. In these volumes a large number of Ferns, chiefly from extra European localities, are recorded or described. The last fascicle contains an important contribution to the Ferns of Indo-China, Siam, Laos, Tonkin, Cambodia, Annam and Cochinchina.

BONNIER, GUSTAV. NAME THIS FLOWER. pp. 330, 64 coloured plates. J. M. Dent & Co.; 7/6. Translated by Prof. G. S. Boulger. A handy book for the beginner who by its aid may track down some of our British flowers. Half-a-dozen were taken at random and the names correctly arrived at. The Coltsfoot, however, was not traced on the first trial. A little more care should have been taken with the names. For instance, both *Orchis montana* and *Habenaria bifolia*, *i.e.*, two genera for the Butterfly Orchid, should have been *Habenaria*, the former *H. virescens*. *Orchis latifolia* is figured, but what is it? not broad-leaved nor spotted. The book is compact and the text-figures eminently useful. Its perusal may induce a neophyte to pursue the study.

BOSE, Sir J. C. LIFE MOVEMENTS IN PLANTS. Vol. i., pp. xxiv., 251, Calcutta.

BOTANICAL ABSTRACTS. Under this title has appeared a monthly serial furnishing abstracts and citations of publications treating of Botany in its widest sense. The prepaid price is 6 dollars 50 cents and it may be obtained from the Cambridge University Press, Fetter Lane, London, E.C. Its chief editor is Burton E. Livingston, John Hopkins University, Baltimore, with 17 sub-editors, including John Hendley Barnhart, New York Botanic Garden, Bibliography, Biography, and History; H. C. Cowles, The University of Chicago, Ecology and Plant Geography; J. M. Greenman, Missouri Botanic Garden, St Louis, Mo., Taxonomy of Vascular Plants; George H. Shull, Princeton University, N.J., Genetics. At present the Taxonomic side is quite inadequate, most British periodicals and our own *Report* being unnoticed. This is also true of Lotsy's *Bot. Centralblatt* in which no allusion is made to the various pages of our *Report* nor to the issue of the most widely circulated of the British Floras.

BOWER, Prof. F. O., Sc.D., F.R.S. BOTANY OF THE LIVING PLANT. pp. 580, tt. 477, 1919. Macmillan & Co., London: 25/- net. In this handsome volume Professor Bower has put before us the substance of his course of University lectures which have been so exceptionally successful for more than thirty years. The matter is treated in 32 chapters. The first deals with germination and the subject is carried on to seed dispersal, all being most clearly and plainly described. As he rightly says, "It is easier to begin the study of the living plant from those of larger size . . . than from minute and unfamiliar organisms, which can only be examined microscopically." This is not according to evolution. As Prof. Bower says, " Vegetation began in the water, spread later to the land and found its climax in the seed-bearing plants of the present day. This too was the sequence of animal life. They had a common origin, they diverged in course of evolution. The most distinctive feature which separates them is nutrition. Plants advanced along the direct line of self-nutrition. Animals advanced along predatory lines. As animals take their food as organic material . . . it is obvious . . . that the green plant . . . is the essential source of supply of organised material to all other forms of life upon the earth's surface." It has recently been claimed that Botany as a science treats of 90 per cent. of the organic life of the globe. This volume must prove of great service to those who teach and those who learn the methods of life and growth of this great section of living matter. The last chapters are devoted to Schizophyta, Sex and Heredity, the latter including a clear statement as to hybridity. This difficult and complex problem is presented in a most lucid and simple manner. Without absolutely endorsing Weismann's theory Prof. Bower holds that evidence is still lacking which negatives that theory but he thinks that transmittable mutations have played a great part in evolution. An appendix treats of the Types of Floral Construction in the Angiosperms, beginning, curiously, with the Liliales. Appendix B. gives some useful particulars on Vegetable Food-stuffs. The well-printed work contains 200 specially prepared illustrations. Others are familiar, including the frontispiece of the Sequoia from Figuier's *Vegetable World.* Another from the same source, but wrongly indexed, is *Orchis maculata* which as usually happens in continental figures is the true *O. maculata* L. (the var. *ericetorum* Lint.), *i.e.*, not the basic-soil *O. Fuchsii.*

BOWER, Prof. F. O. Botanical Research in the United Kingdom during the war. Amer. Journ. Sc. vol. 47, pp. 117-22, 1919.

BRENCHLEY, Dr. WINIFRED. The Uses of Weeds and Wild Plants. Science Progress, July, 1919.

BRITTON, C. E. Note on *Centaurea* in Journ. Bot. 340, 1919.

BRITTON, N. L., and ROSE, J. N. THE CACTACEAE. Vol. 1, pp. vii., 236. Carnegie Institute, 1919.

CAMERON, KATHERINE. FLOWERS I LOVE. There are 24 full coloured reproductions of original drawings with an Anthology of Flower Poems by Edward Thomas. A delightful gift book, 10/6 net, T. C. & E. C. Jack.

CHAMBERLAIN, Prof. CHARLES JOSEPH. THE LIVING CYCADS. Chicago Press, 6/-.

CHRISTIANSEND, C. W. Ueber die Gattung Rosa in Schleswig-Holstein. Schrift. Natw. ver. Schles.-Holst. 247-80, 1916.

CHURCH, Dr A. H. Baxter's British Phaenogamous Botany in Journ. Bot. 58, 1919. Brunfels and Fuchs, *l.c.* 233. William Baxter is here called a Scotchman but according to my information he was born at Rugby in 1787, and he speaks of *Peplis Portula* as reminding him of Hill Morton, near that town, as the birthplace of his mother. Dr Church's paper is a very able account of Baxter and the excellent plates which were figured under his superintendence for *Phaenogamous Botany*.

CLEMENTS, F. E. PLANT SUCCESSION. pp. xiii., 512, tt. 436. Carnegie Institute, 1916.

CLOKEY, I. W. Carex Notes in Rhodora 21, 83-5, 1919. Two new species are described.

COCKERELL, T. D. A. The Story of the Red Sunflower. Amer. Mus. Journ. 18, 38-47, 1918. There are 50 distinct variations of *Helianthus annuus*. New Form of Red Sunflower in Gard. Chron. 64, 186, 1918.

CRABTREE, J. H. British Ferns and How to Identify Them, pp. 64. J. A. Sharp, Epworth Press; 1/6. In this volume of 64 pages an attempt has been made to give a popular description of our British Ferns. It is illustrated by photographs many of which are useful but others leave much to be desired, being evidently photographed from rock-work plants. *Botrychium*, *Hymenophyllum*, *Woodsia* and *Cystopteris montana* are all unrepresented. The nomenclature is absolutely archaic, and is at variance with all modern ideas. A new edition, which will we trust soon be called for, may remedy these defects. Its portability and photographs are points in its favour.

DALLIMORE, W. The Falkland Islands. There is an account of their Forestry and the introduction of the Tussock Grass (*Poa flabellata*) into Britain in Kew Bulletin 209, 1919.

DEANE, W. *Amsinckia* in New England in Rhodora 21, 38-40, 1919.

DENHAM, H. J. GOSSYPIUM IN PRE-LINNEAN LITERATURE. Oxford University Press; 2/-. This gives a very full description of the early history of the Cotton plant, first mentioned by Herodotus in an account of the invasion of India by Darius, circa 520 B.C. "And further there are trees which grow wild there, the fruit thereof is a wool exceeding in beauty and goodness that of sheep." Theophrastus was not likely to have overlooked it and that great botanist says "the island, Tylos-Bahrein, in the Persian Gulf, also produces the wool-bearing tree in abundance." of which he gives a good description. Mr Denham traces the history down to Fuchsius and reproduces a plate of the plant. Fuchsius says by that date its cultivation had spread to Malta and Sicily, doubtless introduced there by the Moors. The records of its cultivation in India go back for three thousand years. Gerard's quaint account of the plant is cited. There is an indigenous cotton in Australia which must have been there before that island continent separated from Eurasia. The paper is an exceedingly useful account of this valuable economic subject.

DRUERY, C. T. British Shield Ferns in Gard. Chron. 200, 1919.

DUMMER, R. A. Vegetation of the Crater and Summit of Mount Elgon, 14,200 feet alt., in Central Africa. 150 species were collected in the crater and at the summit, a tenth per cent. being endemic. Gard. Chron. 138, 1919.

EVANS, B. POLE. The Plant Geography of South Africa. Dept. Agric. of S. Africa. Official Year Book (1917), 1918.

FARRER, REGINALD. THE ENGLISH ROCK GARDEN. 2 vols., pp. LXXIV., 504; viii., 524, 1919. T. C. & E. C. Jack, London & Edinburgh; £3 3s net. In these two large volumes our member, Mr Farrer, has given to those who are rock-gardeners a handsome and useful work. The paper, printing, and the very beautiful photographic illustrations from living plants reflect great credit upon its publishers. Mr Farrer has special qualifications for the task he undertook—a real love of his subject, much practical experience with rock-gardens and rock-plants and their vagaries and of their mysterious likes and dislikes, and a personal acquaintance with the habitats of so many of the included species which he has acquired in his not uneventful journeys in high mountain solitudes over a wide range of seldom visited country. He also possesses that innate touch of genius and enthusiasm that give vitality to what might have otherwise been a prosaic research and has presented the result in a somewhat flamboyant style which certainly does not induce somnolence. In the lengthy and useful introduction of 74 pages he alludes to his distaste for crabbed compilation of ugly Latin epithets which is certainly somewhat unduly prominent in many botanical works. He tells us he has tried to boil down the diagnosis into a few unvarying points so that cultivators may, with a minimum of trouble, be able to ascertain quite clearly the species in question. One trusts that, unlike Mr Ruskin who in one of his lectures tried to describe a dove in a popular manner but left such an impression on his hearers that the last thing in the world to be suggested by it was the bird in question, the popular manner in this work will lead to more definite results. Mr Farrer has adopted the only sound principle in nomenclature—the use of the earliest trivial. Scattered through the volumes, in which the plants are arranged in alphabetical order under their Latin names, are words of wisdom as to choice, usefulness, or otherwise, best methods of culture of the various plants and of the particular soils needed to give the best results. It is here the rock-gardener will find his money's worth. The general reader will meet with much to interest him, and the vivid word-pictures which have made his previous narratives delightful reading form a chain which links together the disconnected pieces of a botanical lexicon into something less disarticulate. The botanical authority is not appended to the scientific names which, however, have been on the whole wisely selected. Much valuable information is given as to the natural habitats and distribution of many of the species. Mr Farrer alludes to the hybrid Saxifrage which he discovered on Ingleborough and which was named × *S. Farreri* by me in *Rep. B.E.C.* 256, 1907. He rightly calls it "an unshowy little thing with creamy white stars on stems an inch or two above rosettes of very minute three-cleft leaves. . . It is an intersectional hybrid found in one example on the western face of Ingleborough and even as a two year seedling showed such intermediacy of characters that its hybrid origin could not be disputed. The parents, it seems, are *S. hypnoides* and the annual *tridactylites*, also abounding there. The hybrid, however, is perennial and certainly distinct." The synonymy has been worked out with much care, but the merging of *Orobus* into *Lathyrus* by Bentham and Hooker has led to some confusion, *i.e.*, *Orobus vernus* is not the same as *Lathyrus macrorrhizus* nor is *Orobus tuberosus* L. the same as *Lathyrus tuberosus* L. The Linnean *O. tuberosus* does not equal *Lathyrus macrorrhizus* of which the valid name is the earlier *L. montanus* Bernh. *Lathyrus tuberosus* L., the Chipping Ongar Pea, is not an *Orobus*. Nor is the Eastern European *Peltaria alliacea* L., despite its garlic smell, the same thing as our British *Sisymbrium Alliaria*. The Peony of the Steep Holmes is *P. corallina*, not *officinalis*. *Villarsia* should have a cross reference to *Limnanthemum*, but it is more correctly *Nymphoides*. One does not seem quite content with the statement that "*Viola Curtisii* is a false name for the biennial *V. sabulosa* of the Channel Dunes." The French plant appears to be *sabulosa* which has not with certainty been recorded for Britain, but the west coast of England does afford a slightly different Pansy which is correctly named *V. Curtisii*. The Primulas occupy 96 pages and their careful and valuable treatment would of itself have justified the production of these eminently useful volumes. The excellence of the photographic reproductions has been alluded to. They are really things of joy and give an idea of life and beauty rarely equalled. Compare for instance those of *Primula lichiangensis* or *Sempervivum ciliatum* with what pass for illustrations of *Mesem-*

bryanthemum or *Atriplex sabulosa* in the *Cambridge Flora*. If in the twentieth century we cannot compete with the draughtsmen of the sixteenth century we may not be wholly disheartened when we feel that in photography we have a handmaid which should be more fully enlisted in our service.

FARRER, REGINALD. Burma-Chinese Alps in Gard. Chron. ii., 29, 75, 101, 124, 161, 221, 262, 288, 301, 315, 1919.

FARROW, E. PICKWORTH. Ecology of the Vegetation of Breckland in Journal of Ecology 55-64, 1919.

FAWCETT, W., & RENDLE, A. B. Notes on Jamaica Plants in Journ. Bot. 65, 312, 1919. Four new species are described.

FERNALD, M. L. The Unity of the Genus *Arenaria*. Reprint from Rhodora, Jan. 1919. In this paper our Honorary Member thinks it wise to retain *Arenaria* so as to include *Alsine*, *Minuartia*, *Ammodenia*, *Honkenya*, *Moehringia* and *Merkia*. This was the view of Bentham and Hooker whose union of genera is now so widely assailed. Professor Fernald shows how slight and variable are the characters on which these divisions of *Arenaria* rest. The nomenclatorial changes involved in this union do not concern our British plants belonging to *Arenaria* but it may influence the name *Spergularia* which, as our member, Mr W. P. Hiern, has already shown on historic grounds, should bear the name *Alsine*, notwithstanding that at present *Spergularia* is conserved by the so-called International Rules, which have been ignored by those who prefer the provincial American Code. Another school of botanists, however, consider the type of *Alsine* to be the Chickweed, *Alsine media* L., and to this the other species of *Stellaria* should be added. The rule as to the name of two united genera being the one which has the larger number of species would be against it. It is a rule, however, which is not consistently carried out and has a distinct limitation.

FERNALD, M. L. The Contrast of the Floras of East and West Newfoundland in Amer. Journ. Bot. 237-47, 1918. *Rubus Ideaus* and some of its Variations in North America Rhodora 21, 89-98, 1919.

GODFERY, Col. M. J. *Epipactis media* (Fries!) Bab. in Journ. Bot. 80, 1919. Suggests the deletion of *E. media* from the British list. The Problem of the British Marsh Orchids, *l.c.* 137, 1919.

GRAVESON, WILLIAM. BRITISH WILD FLOWERS: THEIR HAUNTS AND ASSOCIATIONS. pp. 320. Swarthmore Press, Oxford House, W.C.; 6/6. This, the paper edition for the pocket, makes a portable and charming volume which has already been noticed in the *Report*. The considerable demand for this pleasing work is a proof of its being both useful and attractive.

GROVES, JAMES. Suggests the name *Nitellopsis obtusa* Groves as the correct name for the old *Chara obtusa*—*Lychnothamnus stelliger* Braun in Journ. Bot. 127, 1919.

HARVEY-GIBSON, R. J., C.B.E., D.L., M.A. OUTLINES OF THE HISTORY OF BOTANY. pp. viii., 274. A. & C. Black, London, 1919. We cordially recommend this volume to those general readers who are interested in the manner in which the very comprehensive science of Botany has developed. It may be remembered that Prof. Harvey-Gibson completed the *History of Botany* (see *Rep. B.E.C.*, 46, 1914) which the late Prof. Reynolds Green had prepared. In the present volume which is the substance of a course of lectures given to the third year's men at the University of Liverpool one is delighted to see that Sachs has met with a well-merited reproof for his unfair treatment of Theophrastus whose work, the author thinks, had never been read by him. The statement, however, seems rather strong which suggests that not a single pure botanist appears for more than eighteen centuries later. Strictly speaking it may be accurate, but even if the study of the use as well as the characters of plants were combined during those ages, bare justice is not given to the Roman, Salernian or Arabic schools, not to speak of the Anglo-Saxon workers. The united efforts, although not published for the greater part yet gradually brought together the necessary materials which enabled subsequent workers to establish the science. Gesner, too, scarcely meets with his due meed of praise. The development of the subject from the time of Cesalpini onwards is excellently done. Bentham's appreciation of Linné is too unstinted. He says, "It was reserved for the master mind of the Swede to fix, by the establishment of genera and species upon sound philosophical principles, a firm stage to serve as basis and starting point for further progress and exploration." Tournefort had already fixed the stage by grouping plants in genera even in a more thoroughly scientific manner. Attention was drawn to this by Sir John Hill. Linnaeus often not only altered the names but changed, for the worse, the characters or limitations of many genera, *e.g.*, *Statice* and *Limonium*, *Valeriana* and *Valerianella*, and *Helleborine*. Sachs held a very different and an equally unjust view. He says Linné "showed an utter incapacity of careful observation of any object difficult to observe." Harvey-Gibson harshly speaks of him as "not an investigator at all, for there is no evidence in his works that he made a single discovery of the slightest importance." The fact is, this is the comment of a Laboratory upon a taxonomic student, with a somewhat unpleasing assumption of superiority. Certainly Linné was no evolutionist. His dictum was, "There are just as many species [now] as in the beginning the Being created." A clear view is given of the system of Linné and not unfairly it is characterised as retrograde—as indeed Sir John Hill showed it to be in 1756, but the increased number of students it brought in, acted partly, if not wholly, as compensation. The author says Linné "closes a chapter, he does not open one: he writes the epilogue, not the prologue." Physiology and other branches whose progress was accelerated by the labours of Priestly, Ingenhouss, Senebier, Du Hamel, De Saussure, Knight and others afford some excellent reading. Due acknowledgment is made to Robert Brown. Sachs' savage criticism of Lindley's *Vegetable Kingdom* as "one of the most unfortunate classifications ever attempted" is quoted. One may add that the unconditional surrender of so many of our botanists to Engler's system receives a deserved rebuke when the author says, "I have no hesitation in prophesying that in years to come botanists will regard Engler's system as having done as much to retard the true phylogenetic classification of Angiosperms as Linnaeus's sexual system retarded a natural classification." The phylogenetic tree, however, is as yet but an artificial stage-structure, and it is highly probable that its ramifications are quite different from any already tentatively proposed or dogmatically asserted to exist. Science is alas frequently too dogmatic in some of its statements, and too often its deductions are doubtful. At the beginning of the twentieth century it was heresy to doubt that half the Carboniferous flora was formed by Ferns. Within so short a space as five years Zeiller asserts that the Ferns of the Palaeozoic period though "probably not entirely absent occupied an altogether subordinate rank." It is now asserted that the Dictoyledons and Monocotyledons both appear for the first time in the Lower Cretaceous rocks. It may be recalled that Small dates the evolution of the Compositae from the Lobeloideae in the late Cretaceous—a not very long period in geologic time for such an enormous change from the simplest to the most highly specialised forms. We may have a future pronouncement denying that the Compositae are the climax of vegetable evolution. As putting the matter in a compact and readable form this *History of Botany* is a very valuable contribution.

HAYWARD, IDA M., F.L.S., and DRUCE, Dr G. CLARIDGE, F.L.S. THE ADVENTIVE FLORA OF TWEEDSIDE, pp. xxxii., 296, 1919. T. Buncle & Co., Arbroath; 10/6 net. Opportunities came to Miss Hayward to obtain living specimens of aliens within a narrow district of Scotland, and she worked skilfully and with much perseverance from 1908 to 1917 to put them on record. To this collection her co-author added careful research into the bibliographic history with probable place of origin, the synonyms, and distribution throughout the world, so that in this book the botanist has an account of the earliest arrival of some 348 aliens, with clear and most helpful descriptions of the characters of each family and genus, and a full one of each species, with good illustrations of 78 of them. The whole forms a standard of reference for those aliens, and from it one realises that man and commerce have much influence on the vegetation of areas, and that more information than a list of names is desirable for a Flora. G. Claridge Druce, LL.D., to call him by the new honour lately conferred on him by St Andrews University for good works done, on which members congratulate him, has given special supervision to secure completeness, and has furnished the Introduction, in which the floral history of Tweedside is clearly explained and the point brought out that within its limits wool aliens have appeared that number two-thirds of the unexampled richness met with at Montpellier. This harvest of plants was gathered on the delta-like bed of shingle in the Tweed and Gala below Galashields, including the river banks and heaps of waste near, and the aliens owe their arrival there to wool, which from many countries is washed and prepared at the Mills. Mention is made of numerous species of *Lepidium*, *Chenopodia* and *Graminiae*, with other plants new to Britain or Europe, and Dr Murr has named a hybrid *Chenopodium Haywardiae* after its finder. *Calotis cuneifolia* R.Br. produces fruit known in Australia as "burrs," although on this side we limit the name to the *Medicago*; *Hordeum murinum* L. pierces by its awns the skin of sheep; *Soliva anthemifolia* Juss., 4 inches high, bears its achenes just above the roots; and *Bassia quinquicuspis* F. v. Muell. distributes its seed whilst being rolled by wind over the desert. The plant *Sisymbrium Turczaninowii* Sonder would in the opinion of Dr Druce be better placed under *S. Burchellii* DC. Some of the fruits or seeds after much drastic treatment had a fugitive life, and since the new forms of waste disposal have practically stopped the supply, only a few of the aliens are likely to remain in our Flora, such as *Senecio lautus*, *Rumex Brownii*, *Erodium cygnorum*, and a Rosaceous *Acaena* of New Zealand. At the end of the book a list is added of 289 other adventitious plants found or known on Tweedside, whose introduction is not due to wool.

I. M. R.

[It may be added that the Edition was exhausted within a month of its publication.—Ed.]

HEAL, J. Hybridisation. Treats chiefly of Begonias, Cinerarias and Primulas. The failures to secure a cross are suggestive. See also pp. 46, 55, where Belladonna, Chamomile, *Colchicum*, Foxglove, Henbane, *Rosa centifolia* and Valerian are the plants recommended for culture with some hope of profit. Gard. Chron. 25. 1919.

HIERN, W. P. Tenth Report of the Botany Committee of . . . Devonshire. Reprint from Trans. Dev. Ass. of Sc. Lit. & Art 219-227, 1918. Includes *Saxifraga tridactylites*, forma *minuta* Pollini, Tormohan, Miss Larter. Is this identical with Pollini's Corsican plant? *Euphrasia foulaensis* Towns. Highweek, Miss Larter.

HITCHCOCK, A. S. Report of the Committee on Generic Types of the Bot. Soc. of America in Science ii., 49, 333, 1919.

Holland, J. H. Food and Fodder Plants in Kew Bulletin 1-84, 1919. Contains a large amount of valuable information. The arrangement is peculiar beginning with Leguminosae. Grasses come next, then Cruciferae. *Brassica alba* and *juncea* are both wrongly attributed to Hooker. The use of a capital in specific names is arbitrary. *Vicia Faba* has it but not *Anthyllis Vulneraria*. *Rubus idaeus* does not require one.

Jorgensen, E. Norwegian Forms of *Euphrasia officinalis*. 5 species, numerous sub-species, forms and sub-forms are described in Bergens Museums Aarbok 1916-17, pp. 337, 1919.

Lacaita, C. C. Revision of some Critical Species of *Echium* in Journ. Linn. Soc. 363, 1919. Five species are described—*E. judaeum* nov. sp., *E. australe*, *E. Coincyanum* nov. sp., *E. pycnanthum* and *E. salmanticum*. An account of the genus *Echium* represented in the herbaria of Tournefort, Jussieu and Lamarck is also given as well as those included in Sibthorp and Linnaeus. The *E. creticum* of Linnaeus is shown to be an inextricable compound. Miller's species are also dealt with. Six out of the seven species in the *Gardener's Dictionary* " give rise to troublesome questions." Miller's *E. anglicum*, which has dropped out of our Floras, is, he says, merely the small-flowered pistillate form called var. *parviflorum* by St Amans (*Fl. Agen.* 81, 1821). That author states both forms of corolla had been seen on the same plant by the banks of the Garonne. Miller also transposed the names, his herbarium specimen of *anglicum* being ordinary *vulgare*. Mr Lacaita suggests the revival of Miller's *E. angustifolium* (not of Lam.) to replace *E. hispidum* Sibth. & Sm. It is a valuable note on the plants in question. Mr H. B. Guppy (p. 439) discusses in a masterly way " Plant Distribution from the Standpoint of an Idealist."

Lees, F. Arnold. A Poem on Cheiraths (not a Slavonic Race, but the Wallflower) and a paper On the Nightmare of Names in the Bed of Roses in the Naturalist. The latter contains an astonishing statement namely, " On August 16, 1893, between Nidd Hall and Brearton in the hedge was noticed a huge . . . bush of *Rosa canina* (different from any form noticed before in Yorkshire). This was afterwards named unhesitatingly by J. Gilbert Baker as *R. agrestis*

Savi. Sixteen years later with A. Bradley the place was again visited, but the rose had been plashed and the branches had been half-severed and horizontally wattled to form a low fence. This treatment had not killed the rose, indeed it had vegetatively increased, but the facies had altered and, though glandulous, the plant would no longer pass as *agrestis* Savi at all. It now answered much better to Baker's *frondosa* or *arvatica* in leaf-serration and glandulosity. . . . Any one who had not been able to take oath as to the identity of the stock must have referred the product of 1909 to a quite different section of the genus . . . the stock is still, as it must be, *agrestis*, but it has evolved or developed into . . . Puget's *arvatica*." One would much like to have Lt.-Col. Wolley-Dod's opinion on both these gatherings.

Lindman, C. A. M. Svensk Fanerogamaflora. pp. viii., 639, 1918. In a compact, well printed volume Professor Lindman, our Honorary Member, has made a most admirable digest of the Swedish Flora aided by text figures from his own pen which illustrate the essential characters of the plants under consideration. Terse descriptions of the plants (alas for me in the Swedish language) and a clavis of the species are added. The first 36 pages are occupied in giving a key to the Linnean system of classification, but the arrangement of the Flora is based on Engler s system. The Vienna Rules are strictly followed. To those who hoped that the millennium (botanical) would come by such means there will probably be a sense of disappointment when attempts are made to identify the British plants here named *Cuviera europaea*, *Zerna sterilis*, *Typhoides arundinacea*, *Aronicum paludosum*, *Naumburgia thyrsiflora*, *Scirpus alpinus* and *Trimorpha borealis*. It is pleasing to see the genera *Radicula*, *Helleborine* and *Centaurium* retained. *Polygonatum odoratum* is used instead of *P. officinale*. Dr Lindman has been rather sparing of varieties and his standard of species in many of the Families is fairly high and not unlike our British plan. The grade of sub-species is very sparingly employed. Adventive plants are included and for some a smaller type is used, but very many, with no claims to indigenity, are printed in the same type as the natives, *e.g.*, *Ranunculus Cymbalaria*, *Reseda odorata*, *Rudbeckia*, *Malva crispa*, *Amsinksia*, *Solanum tuberosum*, &c. The greatest divergence from the British Floras is in generic standards for, following Engler, many Benthamian genera are sub-divided, and it seems, in some cases, needlessly so. *Brassica* is separated into 3 genera, *Dentaria* is apart from *Cardamine*, *Armoracia* from *Cochlearia*, *Turritis* from *Arabis*, *Lychnis* from *Melandryum*, *Vaccaria* from *Saponaria*, *Alsine*, *Moehringia* and *Honkenya* from *Arenaria*, *Filipendula* from *Spiraea*, *Torilis* and *Turgenia* from *Caucalis*, *Pastinaca* and *Imperatoria* from *Peucedanum*. *Erigeron* has no British representative, our plants coming under *Trimorpha*. *Bromus* is employed in the sense of *Serrafalcus* and the other species come under *Zerna*. One would have liked much to give a close comparison between the floras of the two countries but space forbids. A superficial glance may, however, not be unwelcome. Dr Lindman is not only an accomplished linguist and artist but a real observer in the field, therefore his views are entitled to great respect. He diverges from our British view in keeping *Cardamine dentata* a distinct species from *pratensis*. *Thalictrum dunense* is not referred to. Is it absent? Nor is *Ranunculus heterophyllus* mentioned. *R. trichophyllus*, *Drouetii* and *floribundus* are all put under *paucistamineus* Tausch. In Britain, hitherto, *floribundus* has been universally put under *peltatus*. No reference is made to *Caltha radicans*. *Helleborus foetidus*, *Capnoides claviculata*, *Cochlearia groenlandica* and *C. alpina* do not appear to reach Sweden which also lacks *Chrysosplenium oppositifolium*, *Apium nodiflorum* and *Erodium maritimum*. No slavish adherence to the *Species Plantarum* is maintained *Cerastium vulgatum* being replaced by *C. caespitosum*, *C. viscosum* by *C. glomeratum*. *Ulmus campestris*, *Montia fontana*, *Potentilla verna*, *Sparganium natans*, *Potamogeton compressum*, *P. marinus*, *Zannichellia palustris*, *Ruppia maritima* and *Scirpus caespitosus* are, among other names, abandoned. As to the contrasting treatment of critical genera it may be mentioned that only one *Erophila* and two species of Pansies are given. *Viola collina* has specific rank and *V. montana* and *V. canina* are fortunately used in the same sense as in *British Violets*. *Polygala amarella* and *uliginosa* are merged under *amarellum*. The Caryophyllaceae include *Scleranthus*, *Corrigiola* and *Herniaria*. *Stellaria pallida* Piré is distinct from *media* and the latter has *S. neglecta* as a sub-species. *Cerastium subtetrandrum* is a distinct species. Under *Sagina Linnaei* (not *sagi-*

noides) is *S. media* Brügg. Is this the same as *scotica*? *S. nivalis* Fr. has another name—*S. caespitosa* Lange, based on the earlier trivial of J. Vahl, a change which must apparently be followed. *Arenaria leptoclados* is a sub-species, but *Spergula sativa* is only a var. of *S. arvensis*. No varieties of *Geranium Robertianum* appear. *Rubus* includes 36 species only, one of which is the big species *arcticus*. The glandular species are singularly absent. This may account for the paucity of species in Sweden. Many of the segregates belong to the Corylifolian group of which *cyclophyllus* is kept as a distinct species. *Alchemilla* has 15 species, *minor*, *pratensis*, *alpestris* and *acutidens* having that rank. It is, however, in the Roses which have been described by S. Almquist (abbreviated At.) that the greatest divergence is exhibited. There are 31 species-groups and no fewer than 205 species are enumerated. Of these it may be presumed that *R. Barclayi*, *scotica*, *scoticella* and *hibernicina* are British. *Crataegus* has been long the subject of study by Prof. Lindman. Here he describes six species of which *C. Oxyacantha* (used in the sense of *oxyacanthoides*) and *Palmstruchii* have two or more styles and *monogyna*, *curvisepala*, *calycina* and *lagenaria* are one-styled. Prof. Lindman, however, tells me that he must describe at least four more species. *Sedum Telephium* and *purpureum* are kept distinct. Have we true *Telephium* in Britain? *Callitriche polymorpha* is distinct. Glück thought it to be a hybrid. *Circaea intermedia* is a separate species. In *Galium*, *G. erectum*, *Mollugo*, *tyroliense* and *elatum* are separate species, as is *Bidens radiata*. *Cirsium* is correctly used instead of *Cnicus*, and another change of name of a British species seems involved, *Cirsium bulbosum* DC. replacing the Avebury *C. tuberosum* All. *Mulgedium* is kept apart from *Lactuca*. *Hieracium* is described by Dahlstedt, who is content with 56 species. Any one attacking our British plants must surely reduce the overloaded list of 150 British species. *Taraxacum* by the same author is more liberally dealt with, as many as 99 species being described under six groups all of which, save the Ceratophora, are represented in Britain. There is only one *Erica* in Sweden, *E. Tetralix*. *Oxycoccus microcarpus* is put as distinct. Unfortunately the names *Statice* and *Armeria* are retained in the old sense. A new name is employed for *Centaurium vulgare*, *i.e.*, *C. Erythraea* Rafn. By an error R. & Br. are given as the authors of *C. capitatum*.

Gentiana baltica and *G. uliginosa* are kept distinct from *campestris* and *Amarella*. *Convolvulus* and *Volvulus* (*Calystegia*) are merged. *Myosotis repens* is not mentioned. The genus *Linaria* is divided into *Cymbalaria*, *Kickxia* and *Chaenorrhinum*. *Veronica serpyllifolia* and *V. borealis* are kept distinct species, as also are *Veronica Anagallis* and *V. aquatica*. *Bartsia* has only one species, *alpina*. *B. Odontites* is split into three species—*Odontites verna*, *serotina*, and *litoralis*. Nine species of *Euphrasia* are given and the shadowiest of shady hybrids which abound in our British literature are unmentioned. *Rhinanthus* is represented by *R. minor* with var. *borealis* and sub-species *stenophyllus*, *major* and *groenlandicus*. Twelve Menthae, five of them not British, are described and only *Thymus Serpyllum* and *Chamaedrys*. *Atriplex hastifolium* Salisb., *deltoideum* and *patulum* are separate species. *A. hastatum* L. is used in the sense of *calotheca*. *A. arenarium* Woods is retained and *Obione* separated as a distinct genus. *Salicornia* is much simplified by the admission of only one species, *herbacea* and a var. *stricta*. In Polygonaceae one is glad to find such innovations as *Rumex glomeratus* and *Rheum digynum* rejected. *Rumex domesticus* is kept apart from *aquaticus* and *maximus* is treated as a hybrid. If that be correct either the true *aquaticus* must occur in Britain or our plants have been wrongly identified as *maximus*. Again in the Elms, Lindman rejects the names used in the *Cambridge Flora* and employs *U. scabra* Mill. for the Wych Elm and *U. foliacea* Gilib. for *U. glabra* Mill. *Parietaria ramiflora* is wisely kept distinct from *P. officinalis* which is not British. Seven Betulae are described and twenty-four Salices—*S. hastata*, *S. polaris*, *S. glauca and S. depressa* are lacking with us. Nine Poplars are given. Here again there are wide differences in the names from those of the *Cambridge Flora*. *Helleborine media* (Fries) remains unnoticed. *Orchis* has eleven species. The figure of the flower of *latifolia* is not like that of *praetermissa*. *O. cruentus* is made a sub-species of *incarnatus*. *Traunsteineri* is distinct but *maculatus* has no varieties given. Fifteen species of *Luzula* are given, *L. pallescens*, *sudetica*, *multiflora* and *congesta* being kept distinct. We have no certain evidence of *sudetica* occurring in Britain. The Junci number twenty-seven species, *J. Kochii* with a syn. *nigritellus* D. Don being kept distinct. There are eight species of Cotton Grass, *Polystachyum* designating *angustifolium*.

Eleocharis and *Scirpus* are merged, the combined genus having twenty species including as it does *Eriophorum alpinum*. *S. austriacus* and *germanicus* represent *caespitosus*. *S. uniglumis* is also distinct. There are ninety-two Carices against our seventy-three. One is glad to find that *C. Pairaei* is retained and not in the sense a few botanists wished to make it replace *C. muricata* L. Lindman gives up *C. muricata* L. for the unambiguous one of *C. contigua* Hoppe, but it scarcely seems advisable. *C. muricata* L., em. Hudson is free from uncertainty. Remembering the howl of derision which first greeted my use of the var. *nemorosa* of *vulpina* one is comforted in seeing it now stand as a distinct species. The lower grade, however, seems more in consonance with fact. *C. rostrata* is still employed instead of the earlier *C. inflata* Huds. *C. aquatilis* has no varieties cited. *C. Leersii* Willd. poses for *C. echinata* Murr. (*C. stellulata* Good.), but surely without justification. *C. helvola* is put as a hybrid under *canescens*. *Agrostis stolonifera* replaces *A. alba*. *Calamagrostis* and *Deyeuxia* are merged. There are no varieties mentioned under *Phragmites vulgaris*. The two Melicae are named as in the *List*. The treatment of *Poa* differs from our British plan. *P. pratensis*, *P. angustifolia* and *P. irrigata* are made distinct species. *P. glauca* has a sub-sp. *Balfouri*. The *distans* section of *Glyceria* is called *Puccianellia*. *Atropis suecica* is made a var. of *P. retroflexa*. An untenable name is employed in *P. rupestris* which should be *P. procumbens*. *Festuca elatior* is given up and the species stand as *F. arundinacea* and *pratensis*. *Vulpia* and *Scleropoa* are separated from *Festuca*, as is *Zerna* Panzer from *Bromus*. *Z. Benekeni* is distinct from *ramosus* as is *Bromus racemosus* from *commutatus*. *Brachypodium* includes *Triticum caninum*. *Agropyron* has only three species including *violaceum*. *Elymus europaeus* is *Cuviera europaea* Koel. Enough has been quoted to show how interesting a Flora has been prepared by Prof. Lindman, and we heartily congratulate him upon completing so useful a work in the terrible time of war.

LINNEAN SOCIETY PROCEEDINGS. Sir David Prain's Presidential Address was mainly occupied in treating of the financial side of the Society and was full of valuable suggestions which cannot fail to be of advantage to the Society. The Linnean Gold Medal was presented to Prof. I. Bayley Balfour for his valuable labours in the science. Jan. 15. The Secretary lectured on " Methods of Botanical Illustrations during Four Centuries." Feb. 20. Mr C. E. Salmon exhibited some beautiful plant drawings by Mr T. A. Stephenson of Orchids which included *Helleborine* (*Epipactis*) *viridiflora*, var. *dunensis* (Whld. & Trav.); var. *vectensis* (Steph.); *Orchis incarnata*, var. *pulchella*; *O. O'Kellyi*; × *O. Evansii*; *O. Fuchsii* Druce; *O. maculata*, var. *insignis* Steph., &c., and Mr E. G. Baker showed some of Miss Corfe's drawings now being made for the Brit. Mus. Bot. Dept. It may be remembered that several of the Orchid drawings in *Rep. B.E.C. Suppl.* 1917 were from the pencil of this talented lady. May 1, 1919. Mr James Small demonstrated the various forms assumed by the pappus in Compositae. June 19. Mr T. A. Dymes gave " Notes on the Life-history of *Iris Pseudacorus*." Nov. 6. Mr L. V. Lester-Garland gave a " Revision of the Genus *Baphia*." The obituary notices include Edward Alexander Newell Arber, M.A., D.Sc., 1870-1918; Sir Frank Crisp, 1843-1919; Anne Casimir Pyramus de Candolle, 1836-1918; Sir Edward Fry, 1827-1919; F. Ducane Godman, 1834-1918, the joint author of the *Biologia* in 63 quarto volumes; John Henry Lace, C.I.E., 1857-1918, a great worker at the Flora of Punjaub and Burma; Dr Alberto Lofgren, born at Stockholm, 1854, died at Rio in 1918, an enthusiastic student of the Brazilian flora.

Marshall, Rev. E. S. Notes on Somerset Plants in Journ. Bot. 147, 175, 257, 1919. *Limonium vulgare*, *Carex disticha* and *Verbascum thapsiforme* are given as new records and the latter is claimed to be indigenous. The plant, which is already included as No. 1861 in the *List* as a European adventive in Britain, is best left in that grade on present knowledge.

Monckton, H. W. The Flora of the Thames Valley Drift between Maidenhead and London, 1919. A portion of Buckinghamshire is included in this area. A more or less complete list of the more important species is given in the Botany of that county in the *Victoria County History*, which has escaped the author's notice. It would have added several species to the list. Has the true *Fumaria muralis* been found in Middlesex? The early records were often incorrect and Pugsley does not give that county for it. *Alchemilla vulgaris* occurs in the alluvial meadows of the Colne in Middlesex and Bucks.

Oenanthe crocata in Bucks and Berks, *Viburnum Lantana* in Bucks and Berks, *Senecio erucifolius*, *Campanula glomerata*, *Hottonia*, *Polygonum dumetorum* all occur in the Bucks area. *Orchis incarnata*, *O. praetermissa*, *Carex vesicaria*, *Avena pubescens*, *Poa nemoralis*, *Koeleria britannica* are among the omissions. Mr Monckton is quite wise in ignoring Mr Hunnybun's record (*Journ. Bot.*, 58, 1918) of *Cuscuta europaea* for Middlesex as the locality is in Bucks which was long known to produce it. He has made an interesting feature in the introduction of plants occurring in neolithic remains which were recorded chiefly from the Lea Valley by Dr Clement Reid. Mr Monckton's list contains 632 species, 31 varieties and 6 hybrids. It makes a compact and useful publication.

Morris, Sir Daniel, K.C.M.G. A Chapter in the Geographical Distribution of Plants—The Dispersal of Fruits and Seeds by Ocean Currents and Tides. Presidential Address to the South-Eastern Union of Scientific Societies, 1918. In this address Sir Daniel Morris alludes to the tropical seeds which have drifted across the Atlantic to our shores, some being mentioned by Sir Hans Sloane in his *Natural History of Jamaica* published 1707-1725. In the Hebrides these seeds were known as Molucca Beans and on the British coast as Sea-Beans and Sea-Nuts. The most widely distributed are the seeds of *Entada scandens*, known in Jamaica as Cocoon. The flat, brown, polished seeds, about 2½ inches in diameter, have great floating powers and are able to retain their germinating capacity for a long period. The Grey Nicker, *Caesalpinia Bonducella*, can also remain in water for years unharmed. A seed of the Horse-eye, *Mucuna urens* was picked up in Cornwall and Darwin obtained a number of them from the Azores, the plant itself being a native of the West Indies where I have seen it in Grenada. Another *Mucuna* seed, perhaps *altissima*, was found as a drift seed at Salcombe. In the Orkneys seeds of *Ipomaea tuberosa* have been found. For three centuries they were unidentified although figured by Petiver. Palms have also drifted to Scotland and *Sacoglottis amazonica*, a native of S. America and the South of Trinidad, drifted to Bigbury Bay in Devon. It appears that Clusius in 1605 knew this seed but it remained unidentified till 1895. Sir Daniel mentioned the wide dispersal by ocean currents of the coconut which is probably indigenous to S. America. He concluded a brilliant address by alluding to the new flora which has occupied Krakatoa since the great eruption in 1883. Sir Daniel Morris occupied the chair of Section K. at the British Association Meeting at Bournemouth in 1919 and gave an able address in which he touched in the losses Botany had sustained in the deaths of Oliver, Massee, Clement Reid, Ethel Sargent, Pearson, Vilmorin, Ducane Godman, Sir Edward Fry and others. Allusion was made to the important Floras in course of publication, to the spread of *Spartina Townsendii*, and to the recent discovery of *Potamogeton upsaliensis*. The greater part of the address was, however, devoted to a subject on which he is the acknowledged authority —the economic development of plant culture in our colonies, in which the importance of selecting the proper strain or sport might result in an immense increase of yield. An instance of the success attending the growth of some of Biffen's new wheats was given. The same is true of Cotton, in which, by certain crossings, a plant immune to disease may be obtained. The importance of this is brought home to us in the actual destruction of the Coffee industry in Ceylon by the disease *Hemiteia vastatrix*. In the light of our present knowledge of seed-selection and perhaps by the use of phosphates instead of nitrogenous manures this might have been avoided. Plant-breeding is now in the forefront in relation to the improvement of crops and it is one which should receive the attention of the professional botanist.

Morris, George. Reconnaissance of the Plant Associations in the Neighbourhood of Newbury, Berkshire, in Journal of Ecology 65-70, 1919.

The National Trust. Report 1918-19. 25 Victoria Street, Westminster, S.W.1. Subscriptions of £100 qualify as Honorary and £20 as Life Members. In 1919 Bulfir Grove, Norfolk, of about 8 acres of woodland between Bale and Gunthorpe was presented by Sir Lawrence and Lady Jones. The Pike of Scafell has also been presented by Lord Leconfield.

Newman, L. F., and Walworth, G. Note on the Ecology of Part of the South Lincolnshire Coast—from Gibraltar Point to 17 miles south to the mouth of the River Witham in Journal of Ecology 204-210, 1919.

Pennell, Francis W. *Symphoricarpos Symphoricarpos* in Addisonia 3, 61, 62, t. iii., 1918. Notes on Plants of the Southern United States in Bull. Torr. Club 183, 1919. Some Remarks on *Limosella* in Torreya 19, 30, 1919.

Pugsley, H. W. Revision of the Genera *Fumaria* and *Rupicapnos*, in the Linnean Society Journal xliv., n. 298. A most valuable and critical study of these difficult genera. Mr Pugsley suggests that *F. vulgaris cornubiensis alba* of Parkinson's *Theatrum Bot.* 287, 1640, noted as growing in cornfields in that county, may be *F. occidentalis.* Is not *pallidiflora* the more likely plant? He notes that *F. confusa* of *E. B. Suppl.* t. 2976, is *F. Bastardi*, var. *hibernica* Pugsley. This was drawn from a Scilly specimen collected by Townsend. A hybrid between *Bastardi* and *Boraei*, he says, has been gathered in Guernsey and one between *Boraei* and *officinalis* in that island as well as in Britain. The latter is the × *F. Painteri* named after our member, the late Rev. W. H. Painter. Under *F. parviflora* it is stated that the *Eng. Bot.* plate, t. 590, is the var. *acuminata* Clavaud. No members of the *Rupicapnos* are found in these islands. Six new species of the two genera are well figured from Mr Pugsley's careful drawings. One wishes he would do an equal service to science in attacking the genus *Thalictrum.*

Punnett, R. C., F.R.S. Mendelism. Ed. 5. Macmillan & Co., London: 7/6 net.

Ramsay, F. M. Everybody's Flower Book. Illustrated by M. Snape. 8vo. pp. xi., 126. 1918. Simpkin, Marshall, Kent & Co.: 5/-. Treats chiefly of plants for decorative purposes.

Rehder, Alfred. Publications of the Arnold Arboretum. No. 3. The Bradley Bibliography. A Guide to the Literature of the Woody Plants of the World Published before the Beginning of the Twentieth Century. Compiled at the Arnold Arboretum of Harvard University under the direction of Charles Sprague Sargent. Vol. V. Index of Authors, Titles and Subsect. Index. pp. 1008, 1918.

Reuter, G. F. Notulae in species novas vel criticas plantarum Horti Botanici Genevensis . . . 1852-68 factae in Ann. du Conserv. et du Jard. Bot. Genev. 239—254, 1914-15. Includes *Helleborus occi-*

dentalis (differt a *H. viridi* habitat in Galliae occid., in Pyr. cent. in monte Hisp. bor. et in Britannia). This corroborates my statement in the *Flora of Berkshire.*

Roberts, W. Some Little Known Botanists in Gard. Chron. 147, 1919. Includes Dr Thomas Clarke, King's Botanist in Jamaica, c. 1774. The others mentioned, which are not included in Britten and Boulger's excellent *Biographical Index* were judiciously omitted as they do not seem to have made any substantial contributions to botanical literature.

Rolfe, R. A. On the Marsh Orchids in Orchid Review 162, 1918. Mr Rolfe says :—"Conducted by Mr T. A. Dymes, F.L.S.," he visited " a marsh near West Drayton, Middlesex, where *O. latifolia* was quite common, many plants being frequently seen in a few square yards of ground. This is the plant known as the Broad-leaved Marsh Orchid, the leaves being unspotted, and the flowers dark purple. *O. incarnata* has flesh-coloured pink flowers and narrower unspotted leaves and was far less common . . . it flowers at least ten days earlier than *latifolia* [*sic*]. Of the hybrid several were found . . . this being *O. Aschersoniana* Hausskn. [?]. The hybrid has unspotted leaves, thus differing from Schulze's figure as it does in the lighter coloured flowers." Mr Rolfe rightly connects it with the Hambledon hybrid which I have recorded as *incarnata* × *praetermissa*. It is quite evident that Mr Rolfe's Drayton ' *latifolia* ' is my *praetermissa* and is not the *latifolia* of Linnaeus. Through Mr E. G. Baker's kindness I have been enabled to see what Linnaeus wrote in *Act. Holm.* 15, 1744, which is referred to under *latifolia* in the *Species Plantarum.* It is quite evident that ' *latifolia* ' is a collective species. Nine different authorities are cited in *Act. Holm.*, and no leaf-characters are mentioned. We shall have to refer to the *Flora Suecica* for a more restricted *latifolia* and there it is quite evident we have a plant which is not *praetermissa*. Mr Rolfe takes a different view and says *latifolia* L. is based on several earlier records, including plants of Bauhin and Vaillant. " These again include Morison's *O. palustris latifolia* and Gerard's *Palma Christa mas*, both of which represent the Marsh Orchis with broad unspotted leaves so that there is not the slightest doubt about the plant intended and Gerard's figure dates from 1597 and is believed to be the earliest British record." An extraordinary fallacy underlies these statements. The *latifolia* of Linnaeus (if a species at all) in a restricted sense must be based upon its description not on its synonyms. When the synonymy contradicts the description the former must be ignored. Linnaeus (*Fl. Suec.* 311-2) puts *latifolia* between *maculata* and *incarnata* and uses the words "*folia parum maculata*" to distinguish it, and says of *incarnata* that it differs from it by "*foliis pallide viridibus immaculatis, nec saturate viridibus maculatis.*" So there is no doubt that *latifolia* L. has leaves which are spotted and is therefore not *praetermissa*. In his herbarium it is represented by a spotted-leaved plant which is not *praetermissa*, but is very like Swiss *latifolia* sent me by Dr Keller. Mr Rolfe states that Gerard's *Palma Christa mas* is the first evidence of *O. latifolia* [*sic*] as British and that it has unspotted leaves. Is the figure cited that of a British plant? The wood block from which it was made was used before, and then not for the first time by Dodoens (*Stirp. Hist.* 240, 1583) for his *Satyrium Basilicum mas*. Gerard not only borrowed the figure but the description, omitting however "nullis aut omnino vix apparentibus maculis respersa." Gerard gives as a locality 'Swainescombe Wood, near Gravesend, Kent and Hampstead Wood, four miles from London' a record which is referred by Trimen and Dyer (*Fl. Middl.* 270) not to *latifolia* but to *incarnata*. I have never seen *praetermissa* in woodland. The Flemish wood block was probably selected by Gerard as the nearest he could obtain to represent a Marsh Orchid and doubtless Trimen and Dyer have taken the more correct view in identifying it with *incarnata* not *latifolia*. There are several woodcuts in Gerard which also belong to the Palmate Orchids, one or more of which fit '*O. latifolia*' better than the one cited, *e.g.*, *Serapias palustris latifolia*. That distinguished botanist, Robert Brown, also fell into an error owing to a woodcut in Gerard. He wished to define the genus containing the *Satyrium repens* of Linnaeus under a new generic name, ignoring the fact that Haller had already established it as *Epipactis*. Seeing in Gerard a figure of the pine-wood Orchid he called it *Goodyera* because he saw in the text connected with it a statement that it had been found near Petersfield, the home of Goodyer, in Hampshire. But he could never have read the description. It undoubtedly refers to *Helleborine palustris* which does grow in 'moist meadows' whereas *Goodyera* does not. At that time *Goodyera* was unknown as British. Goodyer's name is therefore connected with a plant he had never seen. Morison's figure, referred to by Mr Rolfe, is of a strongly bracteate plant and no mention is made of the leaves save that they are ' liliacea, latiora.' A large number of synonyms are added, some of which cover spotted-leaved plants. Here, as elsewhere, synonyms rank secondary to descriptions. Linnaeus' diagnosis does not apply to *praetermissa*. It is quite open to doubt if Linnaeus ever saw a specimen of the Marsh Orchid from Bauhin or Bobart. Moreover we have Bobart's type of *Orchis palmata palustris latifolia* at Oxford which Mr Rolfe says is *praetermissa*, but the specimen is very near aggregate *maculata* (perhaps crossed with *praetermissa*), so that contention falls to the ground. Mr Rolfe says, " modern figures include *O. latifolia* Sm. Eng. Bot. t. 2308, now *O. incarnata* Syme Eng. Bot. 1385 (not of L.). Under this we include the West Drayton plant and now *O. praetermissa* Druce." This statement seems confused and excites doubt as to whether the point at issue is understood. The plate of Syme *Eng. Bot.* t. 1385 represents *Typha latifolia*—probably a wrong reference to t. 1457. Assuming that t. 1457 is meant, this surely represents a form of *incarnata* L. as named by Syme, certainly not *praetermissa* type. T. 1457 is taken from the plate 2308 of Smith which he wrongly labelled *latifolia*. Syme realised that an unspotted-leaved Orchid is not *latifolia* and, following Babington, corrects the error, inserting a plate labelled *latifolia* which Babington contributed to *E. B. Suppl.* t. 2973, both botanists therefore recognising that the Linnean *latifolia* was a plant with spotted leaves, which Mr Rolfe seems to controvert. Again this *Eng. Bot. Suppl.* plate t. 2973, labelled *latifolia*, seems to me a hybrid of *praetermissa* with *maculata* agg. At any rate it is not *praetermissa*. Mr Rolfe seems to think that the spotted-leaved *O. Braunii* grows where ' *latifolia* ' and *maculata* occur together and he cites Curtis in this connection. Curtis's figure of *latifolia* is, however, *incarnata* and a good one, though it is just conceivable there is a trace of *praetermissa*, evidenced in the slightly flatter and broader labellum. Curtis is quite accurate in saying he could not find his ' *latifolia* ' to have spotted leaves near London. The date of his figure, it may be well to say, is not 1821 as given by Mr Rolfe, but before 1788. He died in 1799. Mr Rolfe is quite correct in saying that *maculata* [L.], *latifolia* [Rolfe], *i.e.* *praetermissa*, and *incarnata* [L.] are three distinct species, frequently hybridising and "camouflaged by their hybridity which has created great confusion." One cannot at present expect agreement as to the putative parents of this mongrel offspring. That will have to be tested in a scientific manner under varying conditions and in different soils. One of these, as has been said, Mr Rolfe identifies pretty confidently with *O. Aschersoniana* Hausskn., but it is by no means certain the Middlesex specimens he saw are that plant: indeed he says they are not identical with Schulze's figure. It is quite certain that plants which Keller sent me from Aarau in Switzerland as *latifolia* differ from any I have as yet seen in Britain and Mr St Quintin also agrees that the *latifolia* he is conversant with in Swiss valleys is different from the plant I call *praetermissa* × *maculata*. As to whether *maculata* and *Fuchsii* are distinct species depends partly on the specific standard one sets up. Based on that of the *British Plant List* they would be, on that of the *Student's Flora* they would be sub-species, on Hayward's *Pocket Book* or Bentham they would be varieties. It also depends partly on whether the numerous intermediates are hybrids or natural variants. A third theory, not yet disproved, is that they are soil-species. Mere transference of a tuber from a peaty to a basic soil has not, however, changed the character. Mr C. Wolley-Dod (*Garden* ii., 7, 1878) is cited by Mr Rolfe as asking "whether *O. latifolia* is really specifically distinct from *O. maculata*. Near Eton they grow side by side. Where the ground lies higher the form is *maculata*, but where a swampy hollow intervenes *latifolia* (or *incarnata*) is the prevailing type. The extremes are distinct enough, but I find among them intermediate connecting forms in which no distinct line of difference can be drawn—the lighter the flowers, the slenderer the stalk and the greater the tendency to spotted leaves. But this rule is not without exceptions. By *latifolia* I understand the commoner form of the Marsh Orchis without spots on the leaves, and with rosy purple flowers." An excellent and truthful observation. Wolley-Dod's *latifolia* being *praetermissa* and his *maculata*, *Fuchsii*. The occurrence of intermediates led observers of that era to doubt whether there were two distinct species. Exactly the same thing occurred with the Primrose and the Cowslip and with regard to

Stachys alpina and *germanica*. No one now doubts their distinctness. So too with *Viola stagnina* and *canina*. I have seen the wetter part of an Irish turlough occupied by the pale-flowered *stagnina*, the dry rim with the slatey-blue flowered *canina*, the colour shading off as the ground got moister where the hybrids grew. That is the case too with the two forms of *Orchis maculata* in Oxfordshire. *Fuchsii* grows on the upper and drier soil of a hollow and *maculata* on the moister hollow on humus accumulation; *Fuchsii* on a basic soil in woodland, *maculata* on the glacial drift in an adjoining moor sufficiently acid to give a home to *Salix repens* and *Viola canina*. The distinctness of *Fuchsii*, *maculata* and *O'Kellyi* can only be solved by experimental culture. This, we trust, may be undertaken by such a careful worker as Dr Trow whose study-cultures of *Senecio* have been so crowned with success. Although I have ventured to strongly combat the opinion of so eminent an authority on exotic epiphytal Orchids as my friend, Mr Rolfe, I trust he will understand that it is in no spirit of disrespect, but as emphasising the results of my own observations on the many thousands of plants which I have seen growing in the marshes of nearly every British county.

Rolfe, R. A. *Mesembryanthemum edule* L. in Bot. Mag. t. 8783, 1918. *Ophrys* Hybrids raised by Fernald Denis, Balaruc-les-Bains. A new hybrid, × *Ophrys Fernaldii* Rolfe is described. 'Orchid Review xxvi., 82, 102.

Rydberg, Per Axel. Rosaceae in North American Flora, vol. 22, 481-533, 1918. This concludes the genus. He also describes the Penthoraceae and Parnassiaceae. Psoraleae, *l.c.* vol. 24. Includes 7 new genera. There is a great disturbance of the old nomenclature.

Salisbury, E. J., D.Sc. Variation in *Eranthis hyemalis*, *Ficaria verna* and other Members of the Ranunculaceae with Especial Reference to Trimery and the Origin of the Perianth. Annals of Botany 47, 1919. Among the theoretical conclusions which the adduced facts seem to warrant are:—(a) meristic variation is mainly the outcome of two tendencies, *viz.* fission and fusion; (b) the supernumerary perianth members are usually the result of fission; (c) the decrease in number is usually the result of fusion, *e.g.*, *Anemone*, *Paeonia*, more rarely of suppression; (d) the perianth is either derived entirely from modified foliage leaves, *e.g.*, *Anemone*, *Eranthis*, etc., or in part from bracts and in part from stamens, *e.g.*, *Ranunculus;* (e) the flower of the Ranunculaceae is probably derived from a trimerous type which has, however, in many cases become obscured by multiplication of parts and consequent change in phyllotaxy, or by fusion and abortion.

Salmon, C. E. *Anemone Halleri*, *A. Pulsatilla*, *A. montana* in Gard. Chron. ii., 273. Mr Salmon is doubtless correct in saying that the *Pulsatilla* of many nurserymen is really *Halleri*. Surely 'more mauve tint' does not apply happily to native *Pulsatilla*. Norfolk Notes in Journ. Bot., 190, 1919. Wallis's Pembrokeshire and Carmarthenshire Notes *l.c.* 347, 1919. *Stachys alpina* × *germanica* in Journ. Linn. Soc. xliv., 357, 1919. Aiton (*Hort. Kew.* ii., 301, 1789) gave the name *S. intermedia* to a similar plant.

Salmon, C. E. *Papaver Rhoeas*, *P. dubium* and the Hybrid between them. This hybrid is included in the *Plant List* having been brought to my notice by the late Mr George Nicholson who showed me living plants which from the leaf, flower and capsule characters had doubtless this origin. He grew it and possibly the offspring may have furnished the sheets which Mr Salmon alludes to in the Aberdeen Herbarium which are, he says, forms of *Rhoeas* and *dubium*. Specimens of the hybrid were also distributed by Mr C. E. Britton through the Club. See *Report* 67, 1911. I have seen and recorded such plants in *Fl. Berks* 32, 1897. This is not referred to in this paper. Mr Salmon gives careful notes of the colour of the petals, the buds, peduncle-hairs, summit of peduncle, anthers, pollen and stigma disc, and also figures of the buds and capsules of the hybrid and its assumed parents. As regards the colour of the four poppies that of *hybridum* was described as crimson in the *Flora of Oxfordshire* of 1885, 28 years before the authority Mr Salmon cites. He correctly alludes to the varying colour of *P. Rhoeas* petals, but it is pretty certain that we have two or more micro-species in Britain. Miss Cobbe's Surrey specimens, which had been before me, I named as this hybrid, and with this Mr Salmon agrees. His own specimens, which are very carefully described, come from Chilworth in that county. It may be that plants called *strigosum* sometimes have a hybrid origin. *Strigosum* in some cases does not breed true. New Phytologist 111-117, 1919.

Schiller, Z. *Thalictrum minus* Jacq., non L. in Botanik Közlem xvi., 91-8, 1917. *T. minus* L. is divided into two groups—*T. montanum* Wallr. and *T. collinum* Wallr.

Small, James, D.Sc. Origin and Development of the Compositae (contd.). Reprint from New Phytologist 1-35, 65-91, 129-176, 201-234, 1919; 10/- nett. See *Report* 343, 1918. Chap. X. contains an account of the geographical distribution of *Senecio* which numbers about 2350 species. He considers Bolivia as the centre of distribution and that a number of tribes have arisen from this genus in widely separated regions of the world. Chapter XI. deals with the history and evolution and, while discussing the claims of the Dipsaceous origin, Dr. Small favours that of the Lobeloideae. He visualises the origin of the first *Senecio* as a living moving process. He traces its development from a *Siphocampylus* arborescent scrambler to a dwarf trailing shrub as it was pushed upwards on the hills where under new climatic conditions a stage in its development would be reached when in all essential characters it would be a *Senecio*. Chapter XII treats of fossil Compositae. Late Cretaceous or early Eocene times are indicated as their time of origin. Chapter XIII. General Conclusions. It is suggested that *Senecio* was the first genus to come into existence, and as a genus it consists of 10 per cent. of the huge Family first appearing in the Upper Cretaceous. The evolution of the other genera is shown in a family tree on fig. 79. *Achillea* is suggested to have a Mediterranean origin. Of the Astereae *Solidago* is the primitive genus. He places the anomalous Ambrosinae in the Heliantheae, the origin of which is in South America as early probably as the Lower Eocene. Chapter XIV. The Story of the Compositae in Time and Space is a fascinating treatment of the development of the Family through various geologic periods. Dr. Small can be most heartily congratulated upon a very brilliant contribution to the study of the largest Family which contains 23,000 species and he is also to be thanked for a very complete and necessarily laboriously compiled Bibliography to the subject.

Small, James, D.Sc. The Application of Botany in the Utilisation of Medicinal Plants. Reprint from The Pharmaceutical Journal, 1919; 1/- nett. This is an extremely valuable and suggestive paper in which the very early application of plants as medicines is noted. A brief reference is given to the use of the Poppy in Palaeolithic times as well as to Linseed, etc., occurring in Neolithic remains. The Hindu, Chinese, Egyptian, American, Persian, Cymric (it is claimed that Materia Medica was one of the three sciences of the Gwyddoniad before 1000 B.C.), Greek and Roman Materia Medica are briefly alluded to. The early explorations are described. Preliminary and permanent exploitation of remedies is alluded to with Cinchona taken as a type. Up to 1777 this valuable drug was known to the botanist through amateur investigations. Alas the cultivation of it in the Neilgherries even in 1907 was rapidly decreasing and many of the plantations were being abandoned so that now Holland with its Javan plantations holds a virtual monopoly. This accounts for the high price of Quinine, that specific for Malaria. This failure arose from the imperfect knowledge of climatic conditions. Mere statistics of annual rainfall and temperature are not sufficient unless they agree with the distribution of rain throughout the year as well as the fluctuations of temperature. Ecologists are specially adapted to choose the situation of these and other drug plantations.

Stebbing, E. P. Commercial Forestry in Britain. pp. 186. John Murray, 1919; 6/- nett.

Stout, A. B. Intersexes in *Plantago lanceolata*. Two hermaphrodite and one female form are described at length and illustrated by 57 figures in two plates. Bot. Gaz. 109-133, 1919.

Surface, F. M. Studies in Oat-Breeding. III. On the Inheritance of Certain Glume Characters in the Cross *Avena fatua* × *sativa*, var. *Kherson* in Genetics 252-286, 1916.

Thellung, Dr Albert. *Scandicium*, a new Genus of the Umbelliferae, in Fedde Report, xv., 15-22, 1919. The type of this genus is the plant formerly known as *Scandix pinnatifida* Vent. Jard. de Cels 1800, which I once found at Grandpont, Oxford, among some southern and eastern aliens. It is a native of the interior of south-eastern Spain, the inland of Algeria, Tauria, Asia Minor, Syria, etc., and has been found adventive in Europe at Zürich. For this plant Thellung adopts the name *Scandicium stellatum.* It is the *Scandix stellata* Solander in Russell's Nat. Hist. Aleppo ed. 2, ii., 248, 1794. Dr Thellung describes several varieties.

Thellung, Dr Albert. Beitrage zur Adventivflora der Schweiz (III) in Viertelj. der Naturf. Gesell. in Zürich lxiv., pp. 683-815, 1919. As is the case with any work of Dr Thellung's there is an immense amount of valuable information scattered through this list of Swiss adventive plants. It contains a description of the various forms of *Bromus unioloides.* *Spergularia atheniensis* has occurred adventively in Switzerland, also in New Zealand and South Africa. Thellung describes it as a sub-species of *rubra.* There is a good account of the species of *Helianthus* and also useful diagnoses of *Anacyclus*, very critical species. Dr Stapf has named a new genus of Grasses *Thellungia* after our Hon. Member, associating with it, not unhappily, the species *advena* (Kew Bulletin 1919).

Turrill, W. B. Contributions to the Flora of Macedonia (II) in Kew Bulletin 105, 1919. Botanical Results of Swedish, South American and Antarctic Expeditions in Kew Bulletin 268, 1919.

Turrill, W. B. Observations on the Perianth in *Ranunculus auricomus* and *Anemone Coronaria* in New Phytologist 253-256, 1919.

United States Department of Agriculture. Bureau of Plant Industry, Washington, William A. Taylor, Chief of Bureau. An enormous stream of valuable publications on this subject has continued throughout the war in increasing volume. The Inventory of Seeds and Plants imported from Jan. to March 31, 1916, issued in 1919, is a sufficient example to show the vivid interest and amount of work done by the department.

Vines, S. H., F.R.S., & Druce, G. Claridge, LL.D. An Account of the Herbarium of the University of Oxford, pt. 1, pp. 20, 1897; pt. ii., pp. 55, 1919. Clarendon Press, Oxford. Contains an alphabetical list of contributors from Gregory of Reggio 1606 to present date, with, where possible, date of birth, death and country. Celsius, Linné, Haller, Nissole, Pontederana, Vaillant, Herman, are among the botanists represented. The Horti Sicci in the Oxford Colleges and Bodleian Libraries are also mentioned.

VRIES, HUGO DE. Mass Mutations and Twin Hybrids of *Oenothera grandiflora* Ait. in Bot. Gaz. 377-422, 1918.

WATT, A. S. On the Causes of Failure of Natural Regeneration in British Oak Woods in Journal of Ecology 173-202, 1919.

WEATHERWAX, PAUL. Ancestry of Maize in Bull. Torr. Club 278. He holds that Maize co-ordinately with *Euchlaena* and *Tripsacum* originated from an ancestor long ago extinct.

WILLMOTT, E. Notes from Warley Place [Essex]. *Crocus vernus* in Gard. Chron. 93, 1919. Our member, Miss Willmott, says she has traced the history of it here as far back as 1620-30. Excellent views of the Warley fields of *Crocus* appeared in The Garden Feb. 8, 1919.

WILLIS, J. C., M.A., Sc.D., F.R.S. The Floras of the Outlying Islands of New Zealand and their Distribution in Ann. Bot. 267, 1919.

WILLIS, J. C., M.A., Sc.D., F.R.S. A DICTIONARY OF THE FLOWERING PLANTS AND FERNS. Fourth edition, pp. vii., 701, suppl. pp. liv., 1919. Cambridge University Press; 20/- nett. For many years Lindley and Moore's *Treasury of Botany* was an almost indispensable occupant of the shelves of a botanist and it still is handy to keep within reach, but in a more specialised manner and with stricter limitations this new edition must be in every scientific or reference library. An enormous mass of extremely accurate information is packed in this volume and just the kind of matter which is informative. It is extraordinarily free from misprints or errors. The definitions of families and genera are exceedingly well done and the nomenclature, with few exceptions, is well up to date and authentic. One feels, perhaps, that too much prominence is given to Engler's System but then Dr Willis was brought up on it, and he has given the alternative Benthamian names. The symbols used are duly explained and they are such as shall henceforwards be adopted in these pages. The abbreviations are equally well conceived, except that 'Webb' seems scarcely adequate for Webber since it is likely to be confused with Webb. Can it refer to Weber? One regrets to see *Helleborine* has not been used instead of the inchoate and later *Epipactis*, and that *Erythraea* is still preferred to the much older *Centaurium*, especially as both are valid according to the Vienna Rules and have been adopted by such authorities as Schinz, Lindman, etc. The genus *Cuviera* of the Rubiaceae is mentioned, but not the older Graminaceous genus which has been recently used by Swedish botanists for *Elymus europaeus*. One of very few misprints is *Geraniceae*. Under Huckleberry the Buckinghamshire name for *Vaccinium Myrtillus* should be added as doubtless this is the origin of the American name. One is glad that capitals are employed for specific names derived from genera, etc., and that *Dryopteris* and other Fern genera are used as in Christensen's *Index*. The book is excellently printed and the use of a heavy type for the name makes it most easy of consultation. The paper is sufficiently thin to allow of the large number of pages being compressed into a portable volume. There is a most useful and valuable key to the Families of Flowering Plants as a supplement. The work as a whole is one of the most useful to recommend to every botanist and is indispensable to those removed from a large library.

OBITUARIES.

Davie, Robert Chapman, Capt. R.A.M.C., born at Glasgow 1887, died at Largs, February 4, 1919. He was educated at Glasgow High School and at Glasgow University where he graduated M.A. in 1907. In 1909 he took his B.Sc. and was awarded the Dobbie-Smith Gold Medal in Botany. In 1915 he took his D.Sc. and was appointed one of the Secretaries of Section K. of the British Association. He investigated the Fern genera *Paranema* and *Diacalpe* and in 1918 contributed a paper on the Leaf-trace of Ferns. At Edinburgh he took up the study of the Proteaceae and spent some months in Brazil in making observations. His premature death, as the result of influenza, robs us of one of our very promising members. See Obituary in Nature 189, 1919.

M'Andrew, James, born in the parish of New Spynie, Morayshire, January 29, 1836, died at Edinburgh, July 4, 1917 and was buried with Masonic ritual at Kells in New Galloway. He was a pupil teacher in Milne's Institute, Fochabers, after training at the Edinburgh Normal College, was master at Milne's for five years, then going to Dalbeattie and afterwards in 1869 to Kells. In 1901 he retired and went to reside in Edinburgh. This retirement was made the occasion of giving him a public dinner at Castle Douglas in December of that year in order to testify to the respect the participants had for him as a mark of gratitude for the example he had set as a teacher. The parish minister of Kells alluded to his high standard of method and to his thoroughness. During his residence in Galloway he studied the local flora with great assiduity and published his records in the local newspapers as well as in the *Transactions of the Natural History Society of Dumfries*. He sent lists of the Kirkcudbright plants to Scott-Elliot for the *Flora of Dumfries* in 1882, and of Wigton in 1893, and he was the first discoverer of several interesting species to Galloway. He added in 1882 *Rynchospora fusca* to the Scottish flora from Auchencairn Moor, Kirkcudbright. Among his first records for the latter county are *Rhamnus Frangula*, *Vicia Orobus*, *Saxifraga hypnoides*, *Cicuta*, *Ligusticum scoticum*, *Hieracium holosericeum* and *Poa palustris*. Many of his records appeared in the *Scottish Naturalist*, and they are duly acknowledged in the *Flora of Dumfries*. As his friend, Mr J. Fraser (*Trans. Nat. Hist. Soc. Dumfries*, 1913), says " the number of new records made since M'Andrew's List of 1882 is remarkably small and bears testimony to the care and completeness with which the district was botanised and to the lists compiled by that keen observer and veteran botanist."

Marshall, Edward Shearburn, M.A., F.L.S., born March 7, 1858, died November 25, 1919. By the death of Edward Shearburn Marshall in November last, the Botanical Exchange Club loses one of its best critical botanists and most generous contributors. It is impossible in the space of the brief note that I have been asked to write for the *Report*, to attempt to give a connected biography or even to summarise the botanical achievements of one of the most assiduous and successful British botanists of our generation. Moreover, this is rendered quite unnecessary as a most complete and excellent Memoir, with portraits of both Mr and Mrs Marshall, has been written by Mr James Britten, and appeared in the January number of the *Journal of Botany.* (I believe a few reprints of this are available for those who do not see the *Journal.*) I do not propose, therefore, to traverse this ground afresh, but will add a few notes on my own personal recollections. Our friendship began in 1884 when I was living in Upper Clapton, and Marshall was a curate in Tottenham. Bishop Walsham How, the first Bishop of Bedford (Suffragan Bishop of London) was interested in Botany, and often came to my house to talk of plants and look into the Herbarium. He said to me one day " There is a young curate at Tottenham who is very fond of Botany, and I should like to introduce him to you." Thus began a friendship and intimacy which constantly increased till the date of our friend's death. Curiously enough I knew the lady destined to be his future wife before Marshall met her. John Foster of Witley and his two daughters were staying at Cromer, and we were introduced to them. They liked to come for botanical walks, and the daughters were quick at finding the special *Medicagos* and other plants of the district. The younger, Fanny Isabel, was to be the future Mrs Marshall. From Tottenham, Marshall went to Witley as curate, and here met his fate—a very happy one, for no one knowing them could ever dissociate the two in their lives and botanical work both at home and in the field. Mrs Marshall was never a critical botanist but soon acquired a good general knowledge, and was extraordinarily apt at grasping the characteristics of a plant and often being the first to discover the objects of our search. She was an excellent walker, and never shirked difficult climbs or going into the wettest places. From his curacy at Witley, Marshall went as Vicar to the adjoining village of Milford, where he stayed for ten years. Thence he went as curate-in-charge to Lavington, Sussex, and two years later as Vicar to Keevil in Wilts. This place did not altogether suit him, and two years later he became Rector of West Monkton, near Taunton, where he remained till within a few weeks of his death. He resigned his Cure last Michaelmas, and purchased a small estate of about thirty acres with a good house, which he called, " Offa's Dyke " at Tidenham, near Chepstow. Here he contemplated retiring and making a good botanical garden, and continuing his critical work on botany, being especially engaged on working out the British Saxifrages, of which he had a very rich collection in the West Monkton garden. Whilst staying there last summer, Marshall gave me clumps of most of these Saxifrages, for which I have just constructed a special section in my rock-garden at Brockhurst, East Grinstead, where I trust they may thrive. In August, the Marshalls stayed with us for the last time, and we made many excursions together, on which Mrs Marshall accompanied us, though then suffering from cancer in an advanced stage. During their visit here his only brother died at South Godstone from the effects of a motor-cycle accident. This was a great grief and shock to him. After they left us, Mrs Marshall grew rapidly worse, and died early in November. He was utterly overcome with his sorrows, and on the 25th of the same month passed away himself. This tragic ending to such happy, useful and devoted lives came as a great shock to their own children as well as to their wide circle of friends. After thirty-six years of close friendship, his loss is very deeply felt by myself. We were associated in the compilation and publishing of the *Flora of Kent*, in revising various editions of *The London Catalogue of British Plants*, in work on the *Hieracia*, and in botanical excursions in many parts of Britain, including visits to places as far removed as Caithness and Cornwall. It is impossible to do justice in few words to Marshall's many excellencies and great ability. He was always most generous with his beautifully dried specimens which enrich nearly every herbarium in the country. His painstaking, careful and accurate replies to botanical letters and enquiries are known to all his correspondents. They were often written at much personal inconvenience, in many cases involving references to his books or Herbarium. His botanical specimens were models of careful drying and disposition but attained often at the expense of much needed sleep and rest. When staying with each other I often found that Marshall had got up in the early morning and changed not only his own plants but all mine as well, so that we might not be hindered in starting the fresh day's excursion. He was top of the School at Marlborough College, and at Oxford obtained a Scholarship at Braesnose, retaining to the end his love of the classics. Both he and Mrs Marshall had a keen sense of humour, and their company and conversation were a delight to all who had the privilege of their intimate acquaintance.

The photograph is from a snapshot I took in 1915 of Mr and Mrs Marshall, collecting the variegated form of the common reed in a watery place on the north coast of Caithness. It is characteristic of the way in which they were always associated in their work.

FREDERICK J. HANBURY.

Sir WILLIAM OSLER, Bt., born July 12, 1849, died December 29, 1919. Our revered and beloved President, whose loss we, in common with the civilised race, only in a special degree because of our intimacy with him, so deeply mourn, accepted our highest office at a time, unfortunately, when he was more than usually deluged with work. This prevented his attendance at our meetings in the early part of the year, while during the last sad months of Autumn he was on a bed of sickness. This was brought on by a chill contracted during his long motor journey from Newcastle, where he was unexpectedly held up by the railway strike, and had to take that method of conveyance through the night to Oxford. From this pneumonic attack he never recovered, for though at times he made some progress, yet—and doubtless a fact owing to his life's hope being shattered in the death of his only son in the great war—he lacked the recuperative energy to overthrow his foe, and Oxford has lost one of her most distinguished sons; Medical Science, one of its greatest exponents; literature, a brilliant disciple—witness the 'Old Humanities and the New Science;' and civilisation, the higher culture and the human race, a student instinct with knowledge, a scholar who knew so well what to absorb, what to reject and what to teach; and a man whose generous kindness, whose intense human sympathy and whose power of bringing out the best in anyone with whom he came in contact, made a harmonious combination, the occurrence of which, in the same individual, is of the rarest, and therefore to be held in special reverence and regard. Sir William was not of British birth, although of Cornish ancestry. He was born in the great Dominion beyond the sea at Bondhead, in Ontario, on July 12, 1849. He had much of the Celtic temperament—high strung, keenly intellectual, and with that subtle charm of character perhaps only seen at its very best in that race. He passed through the Toronto University, where he studied medicine, as he did afterwards at M'Gill University, Montreal—a University which has already honoured his memory—and there he graduated in 1872. But his medical studies were not limited to Canada, they were further pursued at London, Leipsic and Vienna. He then went home to occupy the Chair of the Institute of Medicine at M'Gill University. He was made Galstonian Lecturer of the Royal College of Physicians in 1884, and then went as Clinical Professor of Medicine to the University of Pennsylvania. There he was made Professor of the Principle and Practice of Medicine at the John Hopkins University, which he held till he was selected as our Regius Professor in 1905. During his residence at Baltimore he became most keenly interested in the treatment of tuberculosis, and on his coming here he awakened interest in this most important subject, and gave without stint his time and energy to combat the scourge which laid its toll in so many cases upon the bread-winner. But he also created here almost out of chaos the framework of a great medical school, but of this it is not for me to speak. He took the highest ideal of his Professorship and the attendant duties of Master of Ewelme, where this Society has received his welcome. He was also a Curator of the Bodleian—to him a most congenial post—he loved men, and I was going to say most of all books. His own library stands in the front rank as one rich in the history of medicine, but his love of literature was not to be trammelled by even such a wide scope as medicine afforded. He knew the Classics and the English Classics. You may remember that at a paper on the Early History of Botany, although unable to be present he kindly lent for exhibition the first editions of Theophrastus and Dioscorides. As Curator of the Bodleian he kept his eyes open, and through his generosity and kindness such an important collection of 17th and early 18th century Botanical Correspondence (that which belonged to Dr Richardson at Bierley) was secured for our library. A sonorous clock to mark the hours in that place, where the hours flee by too quickly, was another instance of his kindness. Oxford as a city owes much to him—he recognised that he was not only Regius Professor of the greatest University, but a citizen of no mean city, so that he gave freely of his time, of his experience and advice in all matters relating to health in its widest sense. And here as representing the Public Health Committee of the Oxford City Council, I offer my most grateful thanks for all his help. The exigencies of a crowded life left him little time to attend our meetings, but on almost my last interview with him, then little knowing what the immediate future would bring forth, we discussed the subject on which he was to have made his presidential address to-night; and now, instead of a contribution to literature such as that would have been, you have by ironical fate to bear with me while I vainly try to give expression to our feelings of admiration, appreciation and affection for one so recently departed. His subject would have been 'Notes on the Life and Correspondence of William Withering.' By a happy chance he came into possession by purchase of a quantity of letters to Withering, which, however, were more of a medical than botanical character. This seemed a good opportunity to draw attention to one who was not only a great botanist but a great doctor. The use of *Digitalis* in Medicine we owe to him, and although curiously enough he did not seem to be acquainted with its action on the heart, yet it was in anasarca—often one of the results of heart affection—that he made many cures and brought Foxglove into repute. As a botanist, Withering's *Arrangement of British Plants*, first published in 1776, went through many editions, and was the chief British botanical text book for many years. We also know that it was through Sir W. Osler's intuitive knowledge that a copy of Sibthorp's *Flora Oxoniensis* was secured, which was full of notes of Ewelme plants. These were found to be by Randolph, Bishop of Oxford, 1798, and they have been recently published in our Annual Report. There is just one other side of his character which should not remain unnoticed. He was a most eminent and wise consultant —to his patient he gave of his best—a personal allusion may be allowed. During my four months' illness in 1912 he frequently came to me, and his kindness is one of the pleasant memories of an unpleasant time. I was ordered to lie very still, but the advent of an important Herbarium made me anxious to see it, and some packages had been put on my bed when his well-known step was heard on the stairs. Coming into the room he gave a horrified look round, and I could only hurriedly say, 'I hope you have not come to order "No flowers by request," ' when he brightened up and said, 'You will do,' and the storm was averted. As will have been gathered, his success in life was largely due to his bright outlook on things, his patience even with discordant factions, his power of eliciting the best response to demands, and his wide and generous views of men and things. We have had connected with this Society three distinguished holders of the Chair of Medicine—Acland, pioneer of scientific teaching, to whose energy this building is mainly due; Burdon Sanderson—the brilliant experimenter in the laboratory; and Sir William Osler, whose merits speak for themselves. (G. Claridge Druce in *Report of the Ashmolean Natural History Society of Oxfordshire.*)

Petty, Samuel Lister, of Dykelands, Ulverston, who died May 1919, was a well-known authority on the district flora and was a contributor to the *Yorkshire Naturalist.*

Shadwell, Charles Lancelot, D.C.L., formerly Provost of Oriel College, Oxford, born December 16, 1840, died Oxford, February 1919, aged 78. His father, a barrister-at-law, was the son of Sir Lancelot Shadwell, Vice-Chancellor of England. Dr Shadwell was educated at Westminster and as Queen's Scholar he entered Christ Church taking first-class in Mods. in 1861. He was elected Fellow of Oriel in 1864, and was called to the Bar in 1872. He then returned to Oxford and lived a very busy life in University and City circles serving as the first University Sheriff. He was Curator, inter alia, of the Botanic Gardens. In 1905 he was made Provost of his College of which it was truly said he loved every stone, and the new buildings—much criticised as they have been—gifted by the 'Empire Builder,' Cecil Rhodes, are a monument of his reign. In his early days he was a great pedestrian and on his walks became acquainted with our more conspicuous species. The pages of the *Flora of Berkshire* bear testimony to his observations. A life member of our Society and a near neighbour for some years I dined with him almost weekly and, despite his failing memory which led to his resignation of his Provostship, he was glad to recall some of the plants he had noticed or to hear of fresh discoveries. He was a good Italian scholar and had translated the *Purgatory* and *Earthly Paradise* of Dante. He was literary executor of his life-long friend, Walter Pater.

Smith, Frederick John, M.D., born at Castle Donnington, Derby, 1853, his father being a surgeon there, died at Colyton, Devon, April 30, 1919. In 1881 he entered the London Hospital from Oxford, received the Diploma of M.R.C.S. and L.R.C.P., and then the M.B. of Oxon in 1885. The next year he was awarded the Radcliffe Travelling Fellowship. He obtained the F.R.C.S. in 1887 and the M.D. in 1891. In 1902 he became physician to the London Hospital with which he was connected for 37 years. His lectures there were largely attended and his gratuitous labours were unstintingly given. He edited the last three editions of Taylor's *Medical Jurisprudence.* For some years he was a keen plant lover and in his scanty holidays made their search a special object and thus acquired a good herbarium of his own collecting. In 1907 he gathered *Linaria arenaria* near the Westward Ho Links and took it to the British Museum (See *Journ. Bot.* 411, 1907) when I happened to be there. Later I went to investigate the locality and found that it had been sown by a member of the staff of Westward Ho College, now one of our members, the seeds having been brought from Brittany. The plant has now spread for some distance, indeed as far as Saunton. Dr Smith also discovered a curious form of *Cerastium semidecandrum*, with very short capsules, at Aldborough. In the field he was a most cheery companion and over the Grampians and Breadalbanes he has been my delightful companion. He relinquished his important practice in Harley Street hoping to have some years of country life and botanical work. We had planned an attack on Ben A'an and Cairntoul for 1919. This was not to be for in the spring he developed a cerebral tumour and the end came quickly. At the memorial service in St Philip's Church Dr R. Hutchison finished an eloquent address by truly saying, "He did justly, he loved mercy, and he walked humbly in his passage on earth." He was eminently fair-minded, making an excellent examiner. Free from the least trace of affectation he made and kept friends easily. His herbarium has been given by his widow to the Exeter Museum. See Obituary in Nature 191, 1919.

Spence, Magnus, born at Birsay, January 1, 1853, died at St Ola, Orkney, August 20, 1919. He compiled a *Flora Orcadensis* which was published in 1914. In his later years he was much interested in Algae.

Trail, James Wilson Helenus, M.A., M.D., F.R.S., F.L.S., born at Birsay, Orkney, March 4, 1851, died at Aberdeen, September 18, 1919. He was the son of Dr Samuel Trail, Professor of Systematic Theology at Aberdeen and Moderator of the General Assembly in 1874. Trail's inherent love of nature betrayed itself in his early days when as a boy at the Grammar School of Old Aberdeen he spent his spare time in wandering over Aulton Links and Scotstoun Moor intent on the pursuit of Natural History. This enthusiasm was maintained throughout his career at Aberdeen University. After graduating with honours in Natural Science he entered the Faculty of Medicine. During his first three years of medical study he acted as assistant to the Professors of Botany and Chemistry and to the curator of the Natural History Museum and published his first original papers, including contributions to the study of Galls, a subject which later made his name well known in Europe. In 1873 he interrupted his medical studies for two years to join an exploring expedition to the Amazon for the sake of gaining first-hand knowledge of tropical flora and fauna and on his return he published a paper on the Palms of the Amazon Valley. In 1876 he graduated M.A., M.B., C.M., with highest academical honours and in 1877 at the early age of 26 he was appointed to the Regius chair of Botany at Aberdeen which he occupied for 42 years being indeed the last of the taxonomists to hold a professoriate. One regrets that Trail out of his stock of wide and exact knowledge of Natural History has not left to the public a fuller account of his own observations but his University and civic work was arduous, and as a teacher whose aim was not merely to instruct but to develop other minds his work was invaluable. In 1883 he took over the editorship of the *Scottish Naturalist*, a journal started by Buchanan-White in 1871. From 1892 to 1911 he edited, on the botanical side, its outgrowth, the *Annals of Scottish Natural History*. An attempt was made in 1912 to have in Scotland a purely botanical quarterly and Trail must have felt keenly the manner in which some of the younger workers had passed him by. Had his name appeared on the title page the demise of the *Scottish Botanical Review* might not have come so quickly. Trail's systematic work covered a wide field. Besides his work on the Scottish Galls he published many papers on the Fungi and described some new species. In later years he took up the distribution of plants in Scotland and published papers on the Topographical Botany of Scotland from time to time. On this subject he had amassed an enormous quantity of material. Some of the other contributions from his pen are :—The Modes of Dispersion of Seeds of Scottish Wild Plants in Scot. Nat. 257, 1881-82; On Some Leaf Parasites New or Rare in Britain, *l.c.* 124, 1883-84 ; Two New British Ustilagineae, *l.c.* 241, 1883-84 ; List of Casual and Introduced Plants in N.E. Scotland, *l.c.* 243, 1883-84 ; On the Influence of Cryptogams on Mankind, *l.c.* 86, 1887-88 ; Micromycetes, *l.c.* 57, 1889-90 ; Revision of Scottish Discomycetes, *l.c.* 125, 171, 1889-90; Some Unexpected Aliens in the Flora of Aberdeen in Ann. Scot. Nat. Hist. 58, 1859 ; Florula of a Piece of Waste Ground at Aberdeen, *l.c.* 231, 1896 ; 24, 237, 1897 ; 221, 1899 ; Progress of Botany in Scotland, *l.c.* 217, 1901 ; Alien Flora of Lower Spey, *l.c.* 103, 1904 ; The Flora of Fair Isle, *l.c.* 165, 1906 ; Man's Influence on the Indigenous Flora of Aberdeen. *l.c.* 176, 232, 1911.

TUCKWELL, Rev. WILLIAM, born at Oxford, 1829, the son of a leading Oxford surgeon, died at Pyrford Rough, Surrey, February 1, 1919. He was educated at Winchester, of which in 1893 he published memories in *Winchester Fifty Years Ago*, and proceeded to New College, Oxford, of which he was made a Fellow. In 1853 he became master of St Columba's in Ireland, was ordained deacon in 1854, priest in 1858, held for two years a curacy at St Mary Magdalene, Oxford, and was master at New College School from 1857 to 1864. He married in 1858 Rosa, daughter of Captain Strong, a sister of Lady Dilke. In Oxford he worked with ardour in the new movement of science with Acland, Westwood and Buckland and here founded a Microscopical Society. From 1864 to 1877 he was Headmaster of Taunton Grammar School and his advent stirred the dry bones into fierce vitality. Science was taught in a well-fitted laboratory, and he began a series of lectures in English Literature and Natural History which were continued in later days all over England. At Taunton he absorbed the local scenery and the Natural History of the area which radiated in a charming description of the Flora of the Quantocks. In 1878 he became incumbent of Stockton, Warwickshire, where I first made his acquaintanceship, which ripened into a warm friendship. He was so many-sided, so eager, so well read, such a fastidious scholar, and so human and humane that it is one of the privileges of my life to have had the opportunity of coming into contact with him. We had many rambles, not only in his immediate neighbourhood, but in the Oxford county he knew so well and loved so deeply. It was the irony of chance—and to me an unceasing regret—that a pilgrimage over the ground traversed by the 'Scholar Gipsy' with Matthew Arnold and Tuckwell was prevented by the almost sudden death of the former in the very week set apart for this walk, one of the objects of which was to have been the identification of the 'Signal Elm' which is now left somewhat conjectural. At Stockton Tuckwell threw himself into the Agricultural Labour Movement which earned for him not only the cognomen of the 'Radical Parson' but much local antagonism. This is well treated in his *Reminiscences of a Radical Parson*, published in 1905. But his felicitous pen described less contentious matters in a charming work, *Tongues in Trees*, 1891, in which are described the gardens of Oxford, and in later days, after he had gone to Waltham in Lincolnshire, he issued graphic *Reminiscences of Oxford in 1902 and 1907* and in 1909 *Pretractarian Oxford*, in which the characters are limned with life-like fidelity. For some years prior to his death he became blind, but his wonderful memory remained unimpaired and his cheery optimism was as conspicuous as of yore. Only last autumn I called on him at his beautiful home, once the residence of Sir Charles Dilke, near Woking, when he was rejoiced to hear that the berries of *Pernettia*, with which the grounds abounded, were being carried by the birds into the adjacent heath where seedlings were springing up. He recalled not only the names of many mutual friends who had gone into the unseen but the curious instances of plant-occurrence which are often unsolved problems but on which his active and philosophic mind could always make pregnant suggestions. In an obituary notice of Bagnall in our last *Report* mention was made of a day spent in a Warwickshire wood with Bolton King, Tuckwell and Bagnall and now the 'master mind' of the quartet has gone and the body rests with his wife in a grave marked with the motto "Supremum carpere iter consites parati."

WADDELL, Rev. COSSLETT HERBERT, B.D., born at Maralin, Co. Down, March 6, 1858, died at Grey Abbey on Whitsunday, June 8, 1919. In 1881 he commenced his ministerial work as Curate of Lurgan and in 1883 went to Warrenpoint. For four years he was at Kendal, Westmorland, and then in 1888 returned to Ireland as Curate of Carnamoney. In 1890 he was appointed Vicar of Saintfield and in 1912 became Rector of Grey Abbey and Chaplain to the Marquis of Londonderry. He was a B.D. of Trinity College, Cambridge, and a member of the Royal Irish Academy. Archaeology as well as Natural History claimed him as a devotee. Stewart (*Flora of the Northern Counties* p. xii.) quotes his MS. notes of Mosses and Hepatics for Co. Down, and he contributed several papers to the *Irish Naturalist* among which are "*Tamus communis* in Sligo" (102, 1892), "*Rubus villicaulis* and *Selmeri*" (156, 1894), "Irish Knotweeds" (305, 1895), "*Lathraea Squamaria*" (166, 1896), "Irish Rosae" (167, 1898), "*Poa nemoralis* in Co. Down" (142, 1899). He had been a valued member of the Club since 1900 and in 1908 approved of the enlargement of its scope. I once met him in Co. Down and found him to be cheery and keen, and a hater of extremes in a county where extremes are not unusual. He had obtained and deserved the affection of his people. On Whitsunday after conducting two services in the morning, he had a seizure in the afternoon to which he quickly succumbed. His collection of mosses is to be given to the College of Science, Dublin, and his Phanerogams to Queen's University, Belfast.

Wallis, Anthony, born at Reading, July 14, 1919, died at Penrith, August 28, 1919. Educated at the Friends' School at Leyton Park, Owen's College, Manchester, and King's College, Cambridge, where he was Captain of the College Eight. There he took the M.A. degree. He was appointed Inspector in the Education Department where he soon became generally popular and when in Buckinghamshire sent me many interesting records. He added an unexpected plant in *Cladium Mariscus*—a solitary patch—from the Ouse drainage of Buckinghamshire, and only a few days later than myself found an equally rare plant, *Cyperus fuscus*, near Eton. His assistance was greatly valued by me in the preparation of the county Flora. In Cumberland he specially devoted himself to Fungi, and he said that he had eaten every kind known to him with no ill effects.` He had travelled not only in Scotland but in Scandinavia and Central and Southern Europe. His premature death is a distinct loss to British Botany.

West, George Stephen, M.A., D.Sc., born at Bradford, April 20, 1876, died at Edgbaston, August 7, 1919. By the death of

Professor G. S. West, the botanical world, and the study of algology in particular, is deprived of one of its most ardent and enthusiastic adherents. He began his botanical studies at a very early age, and his father being already a competent botanist and having made Algae his particular study, George West had rather unusual opportunities for gaining knowledge in that branch of the science which he always made his own. From the first he helped his father in carrying out research, and even as early as 1889 the father acknowledged the help of his young son, then aged thirteen. He had a very pronounced talent for drawing, and from this time onwards the published work both of the father, William West, and their joint work was entirely illustrated by him. In conjunction with his father he published many papers on Algae, and between them they have probably contributed more than anyone else to our knowledge of this group. By their efforts the algal flora of the greater part of the British Isles has been investigated, besides that of other more distant parts of the world. His long experience with the subject has made him the one authority on Algology in this country, and his advice was much sought by workers in all parts of the world. He was very much appreciated by all who knew him, and his death leaves a gap which it is impossible to fill. His collections and library are left to the University of Birmingham, and his drawings of Algae to the British Museum.

The following is a list of his botanical publications:—

Notes on the Freshwater Algae of the East Riding of Yorkshire in *The Naturalist* 1893 (*b*); New British Freshwater Algae in *Journ. Roy. Micr. Soc.* 1894 (*b*); On some Freshwater Algae from the West Indies in *Journ. Linn. Soc.* 1894 (*b*); Freshwater Algae from Madagascar in *Trans. Linn. Soc.* 1895 (*b*); On some New and Interesting Freshwater Algae in *Journ. Roy. Micr. Soc.* 1896 (*b*); Algae from Central Africa in *Journ. Bot.* 1896 (*b*); On some North American Desmidiaceae in *Trans. Linn. Soc.* 1896 (*b*); Some recently published Desmidieae, *Journ. Bot.* 1896 (*b*); A Contribution to the Freshwater Algae of the South of England in *Journ. Roy. Micr. Soc.* 1897 (*b*); Desmids from Singapore in *Journ. Linn. Soc.* 1897 (*b*); Welwitsch's African Freshwater Algae in *Journ. Bot.* 1897 (*b*); On some Desmids of the United States in *Journ. Linn. Soc.* 1898 (*b*);

Observations on the Conjugatae in *Ann. Bot.* 1898 (*b*); Notes on Freshwater Algae. I. in *Journ. Bot.* 1898 (*b*); A further Contribution to the Freshwater Algae of the West Indies in *Journ. Linn. Soc.* 1899 (*b*); On Variation in the Desmidiaceae and its Bearings on their Classification in *Journ. Linn. Soc.* 1899; The Alga-flora of Cambridgeshire in *Journ. Bot.* 1899; The Alga-flora of Yorkshire in *Bot. Trans. Yorkshire Nat. Un.* 1900 (*b*); Notes on Freshwater Algae II. in *Journ. Bot.* 1900 (*b*); Flora of Koh Chang—Algae in *Botanisk Tidsskrift* 1901 (*b*); A Contribution to the Freshwater Algae of Ceylon in *Trans. Linn. Soc.* 1902 (*b*); A Contribution to the Freshwater Algae of the North of Ireland in *Trans. Roy. Irish Acad.* 1902 (*b*); On some Algae from Hot Springs in *Journ. Bot.* 1902; Scottish Freshwater Plankton in *Journ. Linn. Soc.* 1903 (*b*); Notes on Freshwater Algae III. in *Journ Bot.* 1903 (*b*); Treatise on British Freshwater Algae, Cambridge Univ. Press 1904; Monograph of the British Desmidiaceae, Ray Soc. vol. i., 1904; vol. ii., 1905; vol. iii., 1908: vol. iv., 1911 (*b*); West Indian Freshwater Algae in *Journ. Bot.* 1904; Freshwater Algae from the Orkneys and Shetlands in *Proc. Bot. Soc. Edinburgh* 1904 (*b*): Desmids from Victoria. *Journ. Bot.* 1905; A further Contribution to the Freshwater Plankton of the Scottish Lochs, *Trans. Roy. Soc. Edinburgh*, 1905 (*b*); A Comparative Study of the Plankton of some Irish Lakes in *Trans. Roy. Irish Acad.* 1906 (*b*); Freshwater Algae from Burma, including a few from Bengal and Madras in *Ann. Roy. Bot. Gardens, Calcutta* 1907 (*b*); Report on Freshwater Algae, including the Phytoplankton, of the third Tanganyka Expedition in *Journ. Linn. Soc.* 1907; Algae from Austwick Moss, W. Yorkshire in *The Naturalist* 1908 (*b*): Botanical Synonyms in the Desmidiaceae and Protococcoideae in *Journ. Bot.* 1908; On some Critical Green Algae in *Journ. Linn. Soc.* 1908; Phytoplankton of the English Lake District in *The Naturalist* 1909 (*b*); British Freshwater Phytoplankton, with Special Reference to the Desmid Plankton in *Proc. Roy. Soc.* 1909 (*b*); A Biological Investigation of the Peridineae of Sutton Park in *New Phytologist* 1909; Phytoplankton from Albert Nyanza in *Journ. Bot.* 1909; Algae of Birket Qarun, Egypt, *l.c.* 1909; Algae of Yan Yean Reservoir in *Trans. Linn. Soc.* 1909; The Red Snow Plant, "*Sphaerella nivalis*," *Journ. Roy. Micr. Soc.* 1909; *Hillhousia mirabilis*, a Giant Sulphur Bacterium, *Proc. Roy. Soc.* 1909 (*c*); On some new

African species of Volvox in *Journ. Queckett Micr. Club* 1910; British Antarctic Expedition—Freshwater Algae, London 1911 (*b*); Algological Notes i.-iv. in *Journ Bot.* 1911; The Structure of the cell-wall and apical growth in *Trentepohlia*, *New Phytologist* 1911 (*d*); On the Periodicity of the Phytoplankton of some British Lakes in *Journ. Linn. Soc.* 1912 (*b*); Algological Notes v.-xiii. in *Journ Bot.* 1912; Freshwater Algae of the Percy Sladen Memorial Expedition in South Africa in *Ann. S. Afr. Museum* 1912; Bacteria of the genus *Hillhousia*, *Ann. Bot.* 1913 (*c*); Voyage d'Exploration Scientifique en Columbia in *Memoirs de la Soc. Neuchât. des Sciences Naturelles* 1914; Algological Notes xiv.-xvii. in *Journ. Bot.* 1915; A Contribution to the Cytology and Life-history of *Zygnema ericetorum*, etc., *New Phytologist* 1915 (*e*); Algological Notes xviii.-xxiii. *l.c.* 1916; Cambridge Botanical Handbooks, I. Algae, Cambridge Univ. Press 1916; A further Contribution to our knowledge of the two African species of Volvox in *Journ. Queck. Micr. Club* 1918; A new species of *Gongrosira*, *Journ. Roy. Micr. Soc.* 1918; The Ecology of the Upper Driva Valley in the Dovrefjeld, *New Phytologist* 1910 (*b*).

(*b*) Jointly with his father, William West.
(*c*) Jointly with B. M. Griffiths.
(*d*) Jointly with Miss Olive E. Hood.
(*e*) Jointly with Miss Clara B. Starkey.

Among other deaths in the botanical world are:—

ANNE CASIMIR PYRAMUS DE CANDOLLE, born at Geneva, April 20, 1836, died at Vallon, October 3, 1918. He monographed the Juglandiaceae and Piperaceae for the Prodromus. See Nature 891, 1919.

Prof. COGNIAUX, born at Robechils, Belgium, 1841, died April 15, 1916. He monographed the Cucurbitaceae for the Prodromus and the Melastomaceae for the *Flora of Brazil*. He also published the important *Dictionaire Iconographique des Orchidées* 1897-1907.

Dr W. G. FARLOW, aged 75, Professor of Cryptogamic Botany at Harvard. See Obituary by Prof. Vines in *Ann. Bot.*, Oct. 1919, p. xiv.

F. DUCANE GODMAN, D.C.L., F.R.S., died February 19, 1919, the very distinguished scientist on whom the Gold Medal of the Linnean Society was conferred in 1918. The enormous *Biologia Centrali-Americana* of 62 volumes was produced under his superintendence and with his financial help. See Nature and an Appreciation by Lord Walsingham in Proc. Ent. Soc. 1919. A memorial, to take the shape of a bronze medallion portrait tablet is to be placed in the Natural History Museum, South Kensington, the surplus funds from which are to be handed to the Godman Memorial Exploration Fund which has been founded by Lady Godman and her two daughters with a sum of £5000. Subscriptions may be sent to C. E. Fagan, Esq., I.S.O., Natural History Museum, Cromwell Road, London, S.W.7.

JOHN HOPKINSON, died July 8, 1919, founded the Natural History Society of Hertfordshire in 1874 and contributed many important papers to its proceedings.

Dr ARTHUR E. LECHMERE, died February 14, 1919, a distinguished Mycologist and a pupil of our member, Prof. Priestly. His death occurred soon after his return from Ruhleben. He had previously been imprisoned in the Bavarian salt mines. His energy and stimulating influence in the internment camp did much to help his unfortunate comrades.

HECTOR LEVEILLE, born at Mons, March 13, 1863, died November 25, 1918. He founded and was perpetual secretary of the Academie Internationale de Geographie Botanique, and editor of the 28 volumes of its journal, the *Bulletin de Geographie Botanique.* He published a *Monographie du Genre Oenothera* and an *Iconographie du Genre Epilobium*, neither of them very satisfactory.

Sir JAMES SAWYER, died January 27, 1919, once Professor of Materia Medica at Queen's College, Birmingham, and a distinguished physician with whom I had much correspondence upon our native plants suspected of having therapeutic properties. These he freely experimented with and from such as *Chelidonium*, *Viola odorata* and *Senecio Jacobaea* thought he had good results.

HENRI SUDRE, the great French worker at Rubi and Hieracia, born at Bernac (Tarn), January 12th, 1862, died at Toulouse, December 4th, 1918, and Professor at L'Ecole Normale de Toulouse. His exhaustive Monograph of the Rubi Europae was noticed in the *Report* 368, 1913, and will be further alluded to in the next *Report.* His Monograph on the European Hieracia exists in MS. but has not been published.

NEW COUNTY AND OTHER RECORDS.

ABBREVIATIONS.—*Rep. B.E.C.* = *Report of the Botanical Society and Exchange Club*; *Wats. B. E. C.* = *Report of Watson Botanical Exchange Club*. Woodhall Spa = Plants gathered by the Rev. F. Alston at Tower o' the Moor Fowl-farm, N. Lincoln; Jones = D. A. Jones' MS. Fl. Merioneth (Ruddy's records are contained in Mr Jones' MSS.); † = Adventive; * = New County Record (in the case of adventive plants this is only rarely added); ! placed after a plant signifies that the compiler has seen a specimen; ! placed after a locality that the compiler has seen it there; × placed between two scientific names means that the plant is a hybrid; 52, &c., numbers following a county, refer to the Watsonian vice-county in Topographical Botany; [ ] enclosing a record mean that confirmatory evidence is needed.

*3. THALICTRUM FLAVUM L. Llanderfel, Talsarnan, Merioneth, JONES.

16. ADONIS ANNUA L. Nuffield, Oxon, H. L. GREEN.

17. MYOSURUS MINIMUS L. Between Bexhill and Pevensey, E. Sussex, HARRISON.

19. RANUNCULUS REPENS L. At 3,400 feet on Snowdon. It also occurs at over 3,000 feet on Brandon Mt., Kerry. To both places it may have been conveyed by sheep, but there seems no adequate ground for questioning its indigenity although Dunn included it in his *Alien Flora*. DRUCE.

20. R. ACRIS L., var. STEVENI (Andr.). Llanberris, Carnarvon, DRUCE.

23. R. LINGUA L., var. HIRSUTUS Wallr. Woodwalton Fen, Hunts; Wicken Fen, Cambridge; Shouldham, Norfolk, LITTLE, *in litt.*

32. R. PARVIFLORUS L. Newport, Pembroke (lacks pers. auth.), DRUCE.

*37. R. CIRCINATUS Sibth. Llanderfel, Merioneth, JONES.

38. R. TRICHOPHYLLUS Chaix, var. RADIANS (Revel). Knowle, W. Lancs, 1887, BAILEY, as *heterophyllus*.

40. R. HETEROPHYLLUS Web., var. TRIPHYLLUS (Hiern). Much Marcle, Hereford, 1894, BAILEY; *Llanderfel, Merioneth, JONES.

45. R. LENORMANDI F. Schultz. At over 2,000 feet on Carnedd Llewellyn, Carnarvon, DRUCE; perhaps a hybrid of this with HEDERACEUS, near Chelford, Cheshire, 1892, BAILEY, as *Lenormandi*.

46. R. HEDERACEUS L., var. OMIOPHYLLA (Ten.). Norbury Booths, Cheshire, 1894, BAILEY.

48. CALTHA PALUSTRIS L., var. MINOR DC. Pentlands, E. Lothian; W. Lomond, Fife, TEMPLEMAN.

49. C. RADICANS Forst. Moy, Easterness; Brahan, E. Ross; Tongue, W. Sutherland; Scarmclett, Caithness, DRUCE.

†66. ACONITUM NAPELLUS L. Long Oaks Common, Glamorgan, Miss London, not native in this area; Temple's Druid, Pembroke, ARNETT, *in litt*.

72. BERBERIS VULGARIS L. Rosehill, Pembroke, SAUNDERS; in two places, DRUCE, but known by Arnett for many years.

75. NYMPHAEA LUTEA L., var. INTERMEDIA (Ledeb.). Black Loch, Fife, TEMPLEMAN.

77. CASTALIA ALBA Wood, var. MINOR (DC.). With the foregoing.

80. PAPAVER RHOEAS L., var. PRYORII Druce. Tenby, Pembroke. Var. CAUDATIFOLIUM Fedde. Tenby, Pembroke; Twinstead, N. Essex, DRUCE.

83. P. ARGEMONE L. Glen More, Easterness, at 1,000 feet, DRUCE.

†91. ROEMERIA HYBRIDA DC. Portishead, N. Somerset, Mrs SANDWITH.

†93. ESCHSCHOLZIA DOUGLASII Walp. Dublin, on rubbish, GRIERSON.

†96. HYPECOUM PENDULUM L. Sandy field, Byfleet, Surrey, Lady DAVY.

*104. FUMARIA PALLIDIFLORA Jord. Llanfair, Merioneth, JONES.

*106. F. PURPUREA Pugsl. Fairnilee, Selkirk, DRUCE.

111. F. PARVIFLORA Lam., var. ACUMINATA Clav. Hitchin, Herts, LITTLE.

126. RADICULA ISLANDICA (Oeder) Druce. (PALUSTRIS). As an adventive, in a monstrous state, with very small fruits, at Bardowie ash-heaps, Glasgow, GRIERSON.

128. BARBAREA VULGARIS Br., var. CAMPESTRIS Fr. Bradwell, Coggeshall, N. Essex, BROWN.

130. B. ARCUATA Jacks., ? of Reichb. Llandilo, Carmarthen; Monmouth; Goodrich, Hereford, DRUCE; Galashiels, Selkirk, HAYWARD; side of Tyne, E. Linton, Haddington, TEMPLEMAN.

†137. ARABIS ALBIDA Stev. Naturalised on shingle, Kingsdown, Kent, Rev. H. E. FOX; Merthr Mawr, Glamorgan, WEBB.

140. A. PETRAEA Lam. Moelwyn, Merioneth, JONES. Removes ? in *Top. Bot.*

141. A. GLABRA Bernh. On a wall-top at Higher Carden, Cheshire. MARSDEN-JONES.

143. CARDAMINE AMARA L., var. ERUBESCENS Peterm. Side of Tyne, below Haddington, TEMPLEMAN.

†147. C. TRIFOLIA L. Naturalised on a mossy bank, Singleton, near Swansea, Glamorgan, in great quantity, Hon. Lady INGILBY, vide sp.

†150. LUNARIA ANNUA L. Devon, TROWER; N. Queensferry, Fife, TEMPLEMAN.

161. DRABA INCANA L. On village wall, Bettyhill, W. Sutherland, DRUCE.

164. EROPHILA PRAECOX (Stev.) DC. La Haule, Jersey, DRUCE.

168. COCHLEARIA ALPINA Sweet. Pentlands, above Dolphinton, Midlothian, TEMPLEMAN.

170. C. GROENLANDICA L. Dornoch, E. Sutherland, DRUCE.

†176. HESPERIS MATRONALIS L. Wellingborough, Northants; Walton on the Naze, S. Essex, DRUCE.

†177. WILCKIA MARITIMA Scop. Naturalised on shingle, Portsdown, Kent, Rev. H. E. Fox; Hayling Island, S. Hants; Tenby, Pembroke, DRUCE.

†178. W. AFRICANA F. v. Muell. St Philip's, Bristol, COBBE.

†181. SISYMBRIUM STRICTISSIMUM L. Addison's Walk, Oxon, PARRY.

†183. S. SOPHIA L. Kidderminster, Worcester, HUMPHREYS; N. Queensferry, Fife, TEMPLEMAN; near Belfast, Co. Down, GRIERSON; *Llanderfel, Merioneth, JONES.

†184. S. ALTISSIMUM L. Tenby, Pembroke; Wellingborough, Northants; Brocton, Staffs, DRUCE; Saltney, Flint; Hoygate, Cheshire, COBBE; Silloth, Cumberland, TRETHEWY; E. Boldon, Durham, TEMPERLEY; Cupar, Fife, MATTHEWS; N. Queensferry, Fife, TEMPLEMAN;Dunkeld, E. Perth, TRETHEWY; Belfast, Co. Down, GRIERSON.

†185. S. ORIENTALE L. Abingdon, Berks, PARRY; Hitchin, Herts, LITTLE; Saltney, Flint, COBBE; Silloth, Cumberland, TRETHEWY; Cardiff, Glamorgan; Southampton, Hants, DRUCE. Var. SUBHASTATUM Thell. St Anne's-on-Sea, Lancs, BAILEY, as *stenocarpum.*

†185 (2). S. ERYSIMOIDES Desf. St Philip's, Bristol, COBBE.

†187. S. LOESELII L. Hertford, GRAVESON; Park Royal, Middlesex, *Hb. Druce.*

†187. S. OFFICINALE Scop., var. LEIOCARPUM DC. Orford, E. Suffolk, PARRY.

†196 (2). ERYSIMUM SUFFRUTICOSUM Spreng. Eastbourne, E. Sussex, Dr GILBERT, as *virgatum.*

†200. CONRINGIA ORIENTALIS Dum. Lanarth, Cornwall, in ploughed up pasture, WILLIAMS; Cardiff, Glamorgan, VACHELL; Llandrillo, Merioneth, JONES; Llanberris, Carnarvon, COBBE; S. Queensferry, Linlithgow; N. Queensferry, Fife, TEMPLEMAN.

205. BRASSICA OLERACEA L. In magnificent show at Tenby, Pembroke, DRUCE.

†209. B. TOURNEFORTII Gouan. St. Philip's, Bristol, COBBE; Colchester, BROWN.

211. B. CHEIRANTHOS Vill. This, not *B. monensis*, is the plant of Shire Holme, Gower, Glamorgan, TROW.

†*217. B. ALBA Boiss. Barmouth, etc., Merioneth, JONES.

†218. B. JUNCEA Coss. Lyndhurst, S. Hants, COBBE; Ware, Herts, HIGGENS; Leicester, HORWOOD; Brocton Camp, Staffs, DRUCE; Sandal, York, HORRELL; Watton, W. Norfolk, ROBINSON [Ref. No. 139], as *elongata;* Rodemon, near Crossgar, Belfast, Co. Down, GRIERSON; Beaumaris, Anglesey, DRUCE; Ware, Herts, HAYLLARD; Edenbridge, Kent, TALBOT; Swaythling, S. Hants, RAYNER.

†219. B. DISSECTA Boiss. St Philip's, Bristol, COBBE.

†222. B. POLLICHII Druce. Long Ashton, N. Somerset, ROPER & COBBE; Hertford, GRAVESON.

†223. B. ERUCASTRUM L. (ERUCASTRUM NASTURTIIFOLIUM (Poir.) Schultz). Croft Castle, Hereford, MRS ATHERLEY.

†221. B. ADPRESSA Boiss. On shingle below Crawley Wood, Glamorgan, WEBB.

†225. Diplotaxis erucoides DC. Bedminster, Bristol, Cobbe & Sandwith.

226. D. tenuifolia DC. Tenby, Pembroke, Arnott & Druce; [Ref. No. 130] Watton, W. Norfolk, Robinson, as *Brassica*. (See *Rep. B.E.C.* 317, 1915).

†228. Eruca sativa Mill. Saltney, Flint, Cobbe; Monks Meadow, Gloster, 1911, ex Riddelsdell.

†228 (2). E. cappadocica Reut. Elland, York, Horrell.

†230. Moricandia arvensis DC. Silloth, Cumberland, Trethewy.

†233. Coronopus didymus Sm. Bangor, Carnarvon, Druce; Troon, Ardrossan, Ayr, Grierson; Harlech, Merioneth, Jones; Seacombe, Cheshire, 1871, H. S. Fisher.

†239. Lepidium perfoliatum L. Ashton Gate, N. Somerset, Cobbe; Sharpness Dock, Todd; N. Queensferry, Fife, Templeman.

†240. L. ruderale L. Kidderminster, Stourport, Worcester, Humphreys.

†240 (2). L. neglectum Thell. Pwlheli, Carnarvon; Lyndhurst, S. Hants, Cobbe; Dorchester railway station, Dorset, Druce.

†240 (3). L. ramosissimum A. Nelson. St Philip's, Bristol, Druce; Welbeck, Notts, Goulding.

246. L. Smithii Hook. Near Aberdour, Fife, Templeman.

†247. L. virginicum L. Pwlheli, Carnarvon, Cobbe; Saltney, Flint; West Kirby, Chester, Cobbe; N. Queensferry, Fife, Templeman; Belfast, Co. Down, Grierson.

†247 (4). L. densiflorum Schrad. Silloth, Cumberland, Trethewy; Twerton, N. Somerset, Druce; Lyndhurst, S. Hants; Slough, Bucks, Cobbe; Moulsford, Berks, Neild; Woodhall Spa, Lincs., Alston.

†247 (5). L. BONARIENSE L. St Philip's, Bristol, DRUCE.

†249. THLASPI ARVENSE L. Llanberris, Carnarvon, COBBE; Beaumaris, Anglesey, DRUCE.

†253. IBERIS UMBELLATA L. Blackmill, near Bridgend, Glamorgan, WEBB; Silloth, Cumberland, TRETHEWY; Hayling Island, Hants, DRUCE.

[255. HUTCHINSIA PETRAEA Br. Was introduced by W. Pamplin to the Rectory walls at Llanderfel, Merioneth, RUDDY.]

†256. ISATIS TINCTORIA L. A dozen or more plants in a brick-field near Taplow station, Bucks. They grew on brick earth recently excavated. In this field a room with pottery was found in the soil. Can the woad have come from ancient seeds? A. WEBSTER, *in litt.*

†258. NESLIA PANICULATA Desv. N. Queensferry, Fife, TEMPLEMAN.

†267. RAPISTRUM ORIENTALE DC. Tenby, Pembroke, ARNETT; Billingshurst, W. Sussex, WEBSTER; Uxbridge, Middlesex, LOYDELL, as *rugosa*; Epsom, Surrey, BARTON; Abingdon, Berks, DRUCE.

268. R. RUGOSUM All. Truro, Cornwall, RILSTONE; Weston super Mare, N. Somerset, TODD; Llanberris, Carnarvon, COBBE; Burryport, Carmarthen, DRUCE; Humberstone, Leics, HORWOOD.

†269. R. LINNAEANUM B. & R. St Anne's-on-Sea, N. W. Lancs, BAILEY, as *orientale*; Ware, Herts, as sub-var. ***hirsutum*** Cariot; St Philip's, Bristol, DRUCE.

275. RAPHANUS MARITIMUS Sm., var. ALBUS. At Tenby, Pembroke, with the type, DRUCE.

†281. RESEDA ALBA L. Bexhill, Kent, GREEN.

284. R. LUTEA L., var. LONGIFOLIA Ten. Par, Cornwall, 1908, DRUCE; Newhaven, Sussex, HILTON. [The Merioneth record requires confirmation. Only one record, that in *Top. Bot.*, exists.]

293. VIOLA SYLVESTRIS Kit. Great Tey, Bocking, etc., N. Essex; Edwardstone, Little Waldenfield, W. Suffolk, BROWN. Var. PUNCTATA Druce. Alphamstone, etc., N. Essex; Hitcham, W. Suffolk, BROWN.

294. V. RIVINIANA Reichb., var. DIVERSA Greg. Cwm Idwal, COBBE; Clogwyn, Carnarvon, JONES; Alphamstone, etc., N. Essex, BROWN. Var. PSEUDO-MIRABILIS (Coste). Tongue, W. Sutherland, DRUCE; Wayland Wood, W. Norfolk, ROBINSON.

295. V. RUPESTRIS Schmidt, var. GLABRESCENS Becker. Linton, Upper Wharfedale, W. Yorks, WATERFALL.

296. V. CANINA L., var. PUSILLA Bab. St Catherine's, Jersey, DRUCE; Fordham Heath, N. Essex, BROWN; Wentbridge, S.E. Yorks, Miss ARUNDEL; Pennard, Pembroke, with var. SABULOSA, ROPER. × LACTEA. Spurn Head, E. Yorks, WATERFALL.

298. V. ODORATA L., var. SUBCARNEA (Jord.). Farthinghoe, 1919, CREED; Pury Lodge, Northants, DRUCE. Var. DUMETORUM (Jord.). Alphamstone, N. Essex, BROWN.

299. V. HIRTA L., var. HIRSUTA Lange. Edwardstone, W. Suffolk, BROWN. F. HIRTIFORMIS. Bracknell, Berks; Bletchingdon, Oxon, DRUCE. Var. FOUDRASII R. & F. Cockfield, W. Suffolk, BROWN. × ODORATA = PERMIXTA Jord. Stoke-by-Clare, etc., W. Suffolk, BROWN. × SEPINCOLA Jord. Edwardstone, W. Suffolk, BROWN.

301. V. EPIPSILA Ledeb. Newbridge on Wye, Radnor, TODD. F. GLABRESCENS A. & G. Stow Bardolph, W. Norfolk, LITTLE in *Wats. B.E.C.* 52, 1919; Poynton Park, Cheshire, 1892, BAILEY, as *palustris.*

†302. V. CORNUTA L. Tongue, W. Sutherland, DRUCE.

304. V. SUBTILIS Jord. Wool, Dorset, DRUCE.

306. V. CURTISII Forst., var. PESNEAUI (Lloyd) R. & F. Sheringham, E. Norfolk, F. LONG in *Wats. B.E.C.* 53, 1918.

310. POLYGALA COLLINA (Reichb.). Dornoch, E. Sutherland. DRUCE.

310. P. OXYPTERA auct. ang. Tenby, Pembroke; Wye, Kent, DRUCE.

313. P. AUSTRIACA Crantz. Locally plentiful in its old station at Wye, Kent, DRUCE & WEDGWOOD.

314. FRANKENIA LAEVIS L. At about 20 feet alt. on a cliff near Crabbe, Jersey, shown me by T. ATTENBOROUGH.

318. DIANTHUS DELTOIDES L. *Newborough, Anglesey, gathered by Mr KNIGHT on our excursion to the sandhills with Mr D. A. Jones in August last; Torryhill, Aberdour, Fife, TEMPLEMAN.

†331. SAPONARIA VACCARIA L. Portsdown Fort, S. Hants, Miss VIVIAN; Menai Gas Works, COBBE; N. Queensferry, Fife, TEMPLEMAN.

†332. S. OFFICINALIS L. A form with double flowers of a deep crimson colour, on the coast, Harlech, Merioneth, DRUCE.

336. SILENE CUCUBALUS Wibel, var. HIRSUTA (Gray). Common in Glamorgan, WEBB; near Largo, Fife, TEMPLEMAN.

†340. S. NOCTIFLORA L. Llanberris, Carnarvon, COBBE; N. Queensferry, Fife, TEMPLEMAN; once at Llanderfel, Merioneth, RUDDY, ex JONES.

†341. S. DICHOTOMA Ehrh. Evington, Leicester, HORWOOD.

†342. S. GALLICA L. Llanberris, Carnarvon, COBBE & DRUCE.

†345. S. PENDULA L. Hertford, GRAVESON.

†347. S. ARMERIA L. On railway bank, Ystalyfera, Glamorgan, WEBB; G. W. Railway embankment, Somerton, S. Somerset, BOYS.

†349. S. RUBELLA L. Ware, Herts, DRUCE.

†350. S. MUSCIPULA L. Ovenden, Yorks, PULLAN.

354. S. DUBIA Herbich. Lee-on-the-Solent, S. Hants, abundant, RAYNER.

†356 (4). S. ANTIRRHINA L. Galashiels, Selkirk, HAYWARD.

382. STELLARIA DILLENIANA Moench. S. Nailsea Moor, N. Somerset, SANDWITH.

392. ARENARIA LEPTOCLADOS Guss. Railway bank, Aberdour, Fife, TEMPLEMAN.

399. SAGINA NODOSA Fenzl, var. MONILIFORMIS Lange. Tenby, Pembroke, DRUCE; Gullane Links, Haddington; Tentsmuir, Fife, TEMPLEMAN; Dornoch, E. Sutherland, DRUCE.

401. S. SUBULATA Presl. * On sand, Dolphinton, Peebles; Traprain Law, Haddington, TEMPLEMAN.

407. S. MARITIMA Don. Dornoch, E. Sutherland, DRUCE.

408. S. PROCUMBENS L., var. MARITIMA Gren. La Haule, Jersey; St Lawrence, Guernsey, DRUCE.

412. SPERGULARIA MEDIA Presl (MARGINATA), var. ROBUSTA Druce. East Mersea, N. Essex, BROWN.

413. S. SALINA Presl. Dornoch, E. Sutherland, DRUCE.

†418. CLAYTONIA SIBIRICA L. Naturalised in thousands at Blairadam, Fife, as the white-flowered *alsinoides* Sims, TEMPLEMAN.

†419. C. PERFOLIATA Donn. Donibristle, Fife, TEMPLEMAN.

423. ELATINE HYDROPIPER L. Westwood Pool, Worcester, in quantity. C. REA, vide sp. A most interesting re-discovery.

†426. HYPERICUM HIRCINUM L. Vodol, Carnarvon, COBBE.

435. H. QUADRANGULUM L. (DUBIUM). Newport, Pembroke; Crickhowell, Brecon, DRUCE.

438. H. LINEARIIFOLIUM Vahl. In some quantity in new localities between Pwllheli and Abererch, Carnarvon, as well as at the old habitat near Bodfean, 1919, COBBE, also, with it, probably a hybrid with *humifusum*. This rare species was thought (*Fl. Carnarv.* 28) to be extinct, but about 12 years ago Herbert Napier, then a boy, brought me specimens, DRUCE.

†443. ALTHAEA HIRSUTA L. On fallow ground near Tenby, Pembroke, ARNETT & DRUCE.

†447. LAVATERA THURINGIACA L. Woodhall Spa, N. Lincs, ALSTON.

451. MALVA MOSCHATA L. Near Kirkliston, Linlithgow TEMPLEMAN.

453. M. ROTUNDIFOLIA L. This is the *M. parviflora* from Little Ellingham, W. Norfolk, ROBINSON. See *Rep. B.E.C.* 478, 1916.

†468. LINUM USITATISSIMUM L., var. HUMILE (Mill.), (CREPITANS). Docks, Birkenhead, Cheshire, 1909, TRAVIS. See *Rep. B.E.C.* 78, 1911. Named by THELLUNG.

*478. GERANIUM PRATENSE L. Near the top of Bwlch-y-Groes, Merioneth, JONES.

†*481. G. PYRENAICUM Burm. f. Llanderfel, Merioneth, RUDDY, ex JONES.

485. G. ROTUNDIFOLIUM L. Blackpill, Glamorgan, WEBB.

486. G. PUSILLUM Burm. f. Tenby, Pembroke (lacks pers. auth.); Newborough, Anglesey, DRUCE.

488. G. ROBERTIANUM L., var. RUBRICAULE Horn. Pagham, W. Sussex; Hayling Island. S. Hants, DRUCE.

†490 (2). ERODIUM BOTRYS Bert. Exley's Dump. WEST; Meanwood, York, LEES.

†491. E. MALACHOIDES Willd. Carshalton, Surrey, 1889. *Hb. Druce.*

497 *b*. E. PIMPINELLOIDES Sibth. Pwlheli, Carnarvon, COBBE; Cotton, Beds, LITTLE.

†499. E. CYGNORUM Nees. Back Bentley Waste, Yorks, LEES.

†501. TROPAEOLUM MAJUS L. Beaumaris, Anglesey, DRUCE.

†503. LIMNANTHES DOUGLASII Br. In two places, Bexhill, Kent, GREEN.

504. OXALIS ACETOSELLA L., var. SUBPURPURASCENS DC. GRAIG, Monmouth; Cwm, Glamorgan, WEBB; Largo, Fife, TEMPLEMAN.

†506. O. STRICTA L. Beaumaris, Anglesey, DRUCE.

†512. IMPATIENS PARVIFLORA DC. Beaumaris, Anglesey, DRUCE; Corris, Merioneth, JONES; Coggs, Oxon, HEATON.

†513. I. GLANDULIFERA Royle. Beaumaris, Anglesey, DRUCE; on the banks of the Nidd between Knaresborough and York, 1919, Hon. Lady INGILBY. I saw it there quite naturalised.

†520. STAPHYLEA PINNATA L. In some plenty near Baldon, Oxon, DRUCE. Can this be one of the plants said to have been introduced by Rousseau? The locality adjoins Nuneham where he lived but none of the existing trees seem old enough. *Lilium Martagon* and other aliens are present. Wickwar, near Bishop's Hill Wood, W. Gloster, WHITE.

526. ACER CAMPESTRE L., f. INCISIFOLIA. Hunsbury Hill, Northants, DRUCE.

†529. LUPINUS ANGUSTIFOLIUS L. Llanberris, Carnarvon, COBBE.

*533. GENISTA ANGLICA L. Above Penrhyn Dovey, Merioneth, JONES.

535. GENISTA TINCTORIA L. Tenby, Pembroke, ARNETT.

539. ULEX MINOR Roth, var. LONGISPINOSUS (R. & F.) Druce. London Ride, Savernake, N. Wilts. Bedwyn Brailes (See *Rep. B.E.C.* 192, 1915) is in Wilts. The plant is erect up to 3 feet high, with strong spines. A dwarf form of *nanus*, stems only 4 inches high, grows in the N.E. part of Tottenham Park, N. Wilts, HURST, *in litt.*

†*548. TRIGONELLA FOENUM-GRAECUM L. Hertford, GRAVESON; Elland, York, HORRELL; Denton, S. Lancs, COLLIER, ex TRAVIS, a glabrate form.

†555. T. BESSERIANA Ser. Botley, Oxon; Cardiff, Glamorgan, DRUCE; Acton, Middlesex, LOYDELL; Foss, York, HORRELL.

†556. T. HAMOSA L. Falmouth Dock, Cornwall, COBBE.

†562. MEDICAGO FALCATA L., var. TENUIFOLIOLATA Vuyck. Leith Docks, Midlothian, FRASER.

†564 (2). M. VARIA Martyn. West Mount, Jersey; Ware, Herts, DRUCE; Woodhall Spa, N. Lincs, ALSTON.

†567. M. SCUTELLATA Mill. Odiham, N. Hants, PALMER; Worcester City, MURRAY.

†572. M. TRUNCATULA Gaertn. Shoreham, W. Sussex, HILTON, as *tribuloides* (*Rep. B.E.C.* 216, 1906); St Philip's, Bristol, COBBE.

†574. M. TUBERCULATA Willd. Colchester, BROWN; Kirkstall, PULLAN; Dewsbury, York, HALEY; Leith, Midlothian, FRASER; Bristol, COBBE.

†578 (2). M. PRAECOX DC. Bootle, S. Lancs, WHELDON.

†579. M. HISPIDA Gaertn. Kelso, Roxburgh, BROTHERSTON. *Journ. Bot.* 22, 1876, as *lappacea*. Var. APICULATA (Willd.). Kew, Surrey; Botley, Oxon, PARRY; *Llanderfel, Merioneth, JONES; Dublin, GRIERSON. Var. DENTICULATA (Willd.). Tenby, Pembroke, DRUCE; Llanderfel, Merioneth, JONES. Var. CONFINIS Burnat. Wallasey, Cheshire, 1875, LEWIS, as *apiculata*.

580. M. ARABICA Huds. Colchester, BROWN; N. Queensferry, Fife, TEMPLEMAN.

581. M. MINIMA Desr., var. LONGISETA DC. Abingdon, Berks, PARRY.

586. M. LUPULINA L., var. WILLDENOWIANA Koch. As a small fruited form, Glasgow, GRIERSON.

593. MELILOTUS OFFICINALIS Lam., var. UNGUICULATA Ser. Hove, W. Sussex, HILTON, as *ruthenica*; Haddington, Oxon, PARRY.

†596. M. ARVENSIS Wallr. and †597. M. INDICA All. N. Queensferry, Fife, TEMPLEMAN.

†615. TRIFOLIUM CONSTANTINOPOLITANUM Ser. St Philip's, Bristol, COBBE; Acton, Middlesex, LOYDELL, in *Hb. Druce*.

†616. T. ECHINATUM Bieb. (SUPINUM Savi). Andenshaw, S. Lancs, COLLIER, ex TRAVIS.

*618. T. SCABRUM L. Towyn, Barmouth, Merioneth, JONES.

620. T. SUBTERRANEUM L. On limestone bluff, near Port Eynon, Glamorgan, Miss SIMONS.

†629. T. MICHELIANUM Savi. Pyrford, Surrey, Lady DAVY.

†631. T. PARVIFLORUM Ehrh. Pyrford, Surrey, Lady DAVY.

†634. T. PATENS Schreb. Brighton, Sussex, HILTON, as *T. brutium*.

*638. T. FILIFORME L. Dolgelly, Merioneth, JONES.

641. ANTHYLLIS VULNERARIA L., f. OVATA. Rhossili, Glamorgan, RICHARDSON. Var. OCHROLEUCA Corb. Plemont, Jersey, DRUCE.

648. LOTUS TENUIS Kit. A specimen from Royston, Herts, 1915, LITTLE, is intermediate between this and *corniculatus*, teste

Thellung. Var. PEDUNCULATUS (Cavan.). Hythe Quay, Colchester, 1919, Brown.

650. L. ANGUSTISSIMUS L. Morte Point, N. Devon, Prof. Maclean.

655. ASTRAGALUS DANICUS Retz. Dornoch, E. Sutherland, both white and purple, Mrs Wright, vide sp.; St Andrews, Fife, with reddish-purple flowers, Druce.

†657. A. BOETICUS L. St Philip's, Bristol, Mrs Sandwith.

†666. CORONILLA VARIA L. E. Boldon railway, Durham, Temperley.

671. HIPPOCREPIS COMOSA L. Limeslade, second station for Glamorgan, Webb.

680. VICIA OROBUS DC. Brynamman, Glamorgan, Webb.

†681. V. VILLOSA Roth. Evington, Leics, Horwood; Minehead, S. Somerset, Loydell.

†681 (2). V. BENGHALENSIS L. Belgrave, Leics, Horwood.

†683. V. VARIA Host. Ware, Herts, Druce; Belgrave, Leics Horwood; Cobham, Kent, Miss Ridley; Port Talbot, Glamorgan, Wakefield.

†686. V. CALCARATA Desf. This is the *V. monanthos* from St Philip's, Bristol, Cobbe; Ware, Herts, Druce & Trower.

688. V. SEPIUM L., var. MONTANA (not ANGUSTIFOLIA) Koch. Glen More, Easterness, where I saw it 51 years ago, Druce. Var. DUNENSIS Druce. Reay and Bettyhill, W. Sutherland, Druce.

†691. V. LUTEA L., var. CAERULEA Archang. Evington, Leics, Horwood; St Philip's, Bristol, Cobbe.

†695. V. MELANOPS Sibth. & Sm. Kirkstall, York, Pullan.

†701. V. peregrina L. Ware, Herts, Druce & Trower.

705. V. tetrasperma Moench, var. tenuissima Druce. Wye, Kent, Druce.

713. Lathyrus palustris L. Near Thorp, Notts, N. & C. Sandwith.

†721. L. Cicera L. Belgrave, Leics, Horwood; Newark, Notts, Rev. A. H. Smith.

†722 (2). L. hierosolymitanus Boiss. Morley, York, Horrell.

†724. L. Ochrus L. Pyrford, Surrey, Lady Davy.

737. Prunus avium L. Taychreggan, Argyll, Lester-Garland, *in litt.*

†739. P. domestica L. Whittlesey, Hunts; Haywood, Staffs, Druce.

741. P. spinosa L., var. rusticana (J. & F.). Gt. Bedwyn, Wilts, Hurst.

†744. Spiraea salicifolia L. (as a garden hybrid). Pyrford, Sussey, 1913, Druce; Ashiestiel, Selkirk, Hayward.

†745 (3). S. Douglasii Hook. Between Skewen and Loulas, Glamorgan, Webb.

†745 (5). S. opulifolia L. At Brahan, E. Ross, of course planted and not even an outcast, Druce.

750. Rubus nessensis Hall. Rhydydefaid Woods, Glamorgan, Trow.

758. R. cariensis Genev. Blackpill, Glamorgan, Wakefield.

764. R. incurvatus Bab. Tackley, Oxon, Druce & Riddelsdell.

777. R. villicaulis Koehl. Highbury Wood, N. Somerset, Roper.

804. R. lasioclados Focke, var. angustifolius Rogers. Herts, Druce.

815. R. raduloides Rogers. Park Corner, Oxon, Druce.

817. R. melanoxylon P. J. Muell. Park Corner, Oxon, Druce.

*855. R. hostilis P. J. M. & W. Nuneham, Oxon, Druce.

†877. R. laciniatus Willd. Near Kirkcaldy, Fife, Templeman.

*879. R. saxatilis L. By the ~~T~~yne, above W. Linton, Peebles, L/ Templeman.

883. Geum rivale L. With double red flowers at Dornford, S. Wilts, Hon. Mrs Tryon, vide sp.; also with a flower in the leaf axil, Blairadam, Fife, Templeman; *near Chertsey, Surrey, 1920, where Miss Tulk found it some years ago, Lady Davy, *in litt.*

886. Fragaria vesca L. With white fruit at Old Quarry, Aberdour, Fife, Templeman.

†887. F. moschata Duchesne. Near Bridgend, Glamorgan, Hon. Mrs Leith.

†892. Potentilla recta L. Near Tintern, banks of Wye, Monmouth, 1873, Bailey.

†895. P. argentea L. Balwearie Braes, Fife, Templeman.

†906. P. norvegica L. Purwell field, Herts, Little: Burntisland, Fife, Templeman: Dundee, Forfar, Druce: Glen More, Easterness, Mrs Wedgwood: Hitchin, Herts, Little.

909. Alchemilla alpestris Schmidt. Craig Cillie, Brecon, Druce; Cupar, Fife; Loch Loch, E. Perth, Templeman.

909. A. MINOR Huds. Bangor and Llanberris, Carnarvon, COBBE; Pentlands, above Dolphinton, Midlothian; Glen Tilt, E. Perth, TEMPLEMAN.

†910. A. ARGENTEA Don. In a sand-pit, Comiston, Edinburgh, 1914, TEMPLEMAN, here a garden outcast.

†915. AGRIMONIA AGRIMONOIDES L. Ditch side, Garscadden, Dumbarton, GRIERSON.

*917. POTERIUM SANGUISORBA L. Near Cowarch, Merioneth, JONES.

†921. P. CANADENSE A. Gray. Innellan, Firth of Clyde, 1919, Mrs MALLINSON, vide sp.

*963. PYRUS TORMINALIS Ehrh. Hendre Mynach, Merioneth, JONES.

964. P. GERMANICA Hook. f. Spiny form, Holwood Park, W. Kent, MARRIOTT, vide sp.

†965. CRATAEGUS AZAROLUS L. On the peat moor and not near a house, Shapwick Station, N. Somerset, 1919, Mrs SANDMITH.

966. C. MONOGYNA Jacq. A specimen in flower at Berriedale, Sutherland, August 20, 1919, DRUCE. Var. LACINIATA (Wallr.). Harlech, Merioneth; Haywood, Staffs; and as untypical, large-leaved forms with the sinus not reaching the midrib at Ashton, Northants; Ramsey, Hunts; North Leigh, Oxon, DRUCE; Glyndyfrdwy, Merioneth, JONES. Var. INCISIFOLIA Druce. Colne, S. Lancs, TRAVIS; Ramsey, Hunts; Hunsbury Hill and Aynhoe, Northants; Haywood, Staffs, DRUCE. Var. QUERCIFOLIA (Loud.). Hunsbury Hill, Northants; Ramsey, Hunts; Selkirk; Lairg, E. Sutherland; Tongue, W. Sutherland, DRUCE. Var. PTERIDIFOLIA Loud. North Leigh, Oxon, DRUCE. Var. MICROPHYLLA Druce. Hunsbury Hill, Northants; Haywood, Staffs, DRUCE. Var. SPLENDENS Druce. Ramsey, Hunts; Hunsbury Hill, Northants, DRUCE. × OXYACANTHOIDES. Ramsey, Hunts; Hunsbury Hill, Northants; North Leigh, Oxon; Chatteris, Cambridge, DRUCE.

967. C. OXYACANTHOIDES Thuill. Pyle, Bishopton, Glamorgan, WEBB; Hunsbury Hill, Northants, DRUCE.

†972. COTONEASTER MICROPHYLLA Wallich. Llychgair, Carmarthen, quite naturalised; Llanberris, Carnarvon, DRUCE; Burntisland, Fife, TEMPERLEY; among heather, Ballcuirke, Galway, TRETHEWY.

†972 (2). C. SIMONSII Baker. Seedlings by Auchmore burn, Killin, M. Perth, FRASER.

975. SAXIFRAGA OPPOSITIFOLIA L. A stout form on rocks about 100 feet above sea level, Bettyhill, West Sutherland, DRUCE.

*982. S. GRANULATA L. Side of Dee, Llanderfel, Merioneth, RUDDY, ex JONES.

987. S. HIRCULUS L. By the Medwin, Pentlands. The habitat is in Lanark, not Peebles, TEMPLEMAN; *Cabrach, Banff, JOHN YEATS, a specially interesting new county record, and the ninth record for Scotland. Specimens are placed in *Herb. Hort. Bot. Edin.*

988. S. STELLARIS L., var. FONTANA Druce. Carnedd Llewellyn, Carnarvon, in some quantity; Corrie Sneachda, Cairngorm, Easterness, DRUCE.

*1000. PARNASSIA PALUSTRIS L. Llanymawddwy, Merioneth, JONES.

†1000 (10). PHILADELPHUS CORONARIUS L. Baldon, Oxon, DRUCE; Notgrove, Gloster, RIDDELSDELL.

†1001. RIBES GROSSULARIA L. Beauly, Easterness, DRUCE; Harlech, &c., Merioneth, JONES.

†1002. R. NIGRUM L. Crickhowell, Brecon; Carmarthen; Haverford West, Pembroke; Moy, Beauly, Easterness; bird-sown in the enclosure which once contained *Pinguicula alpina* at Avoch, E. Ross; Tongue, W. Sutherland; Berriedale, Caithness, DRUCE; Llanderfel, Merioneth, RUDDY, ex JONES.

†1003. R. RUBRUM L. St David's, Fife, TEMPLEMAN; Nantlle, Pembroke, SAUNDERS; Conan River, E. Ross, DRUCE.

†1004 (4). R. SANGUINEUM Pursh. Far from houses, Penrice, Glamorgan, WEBB.

1010. SEDUM TELEPHIUM L., var. PURPUREUM L. Near St Albans, Herts; Twinstead, N. Essex; Harlech, Merioneth; Llanberris, Carnarvon; Tay-side, M. Perth, DRUCE; Carmarthen, HAMER; Llandrindod, Radnor, TODD; Saline, Fife; Traprain Law, Haddington, TEMPLEMAN.

†1012. S. REFLEXUM L. Newbridge, Radnor, TODD; very profusely on shingle at Shingle Street, Hollesley, E. Suffolk, BROTHERS; Llanfair, &c., Merioneth, JONES.

†1014. S. SEXANGULARE L. Frequent at Ilston, Glamorgan, WEBB.

1015. S. ACRE L. Bridge of Allan, Stirling, OSTENFELD, so determined by him. Var. DRUCEI (Graebner). Sent by G. C. Brown from Pas de Calais, France, and by the lines in Belgium. In the dried state I am unable to distinguish it from our common British plant. At Tongue, W. Sutherland, a form with large flowers and with fewer trailing branches grew at sea-level, DRUCE.

†1016. S. ALBUM L. Pettycur, Fife, naturalised, TEMPLEMAN.

†1018. S. DASYPHYLLUM L. Between Denbigh and St Asaph, WEBB.

†1023. S. STOLONIFERUM Gmel. Llangyfilach, Blaenrhondda, Glamorgan, WEBB; Felixstowe, E. Suffolk, BROTHERS.

†1023 (2). S. SPURIUM M. Bieb. Pettycur, Fife, TEMPLEMAN.

1027. DROSERA ANGLICA Huds. *Cannock Chase, Staffs, where Capt. VEVERS showed it me. This year it was in extreme plenty in Ross, Sutherland and Caithness, DRUCE.

*1033. MYRIOPHYLLUM ALTERNIFLORUM DC. Near Norwich, TALBOT. The specimens are not in good condition but I think they are correctly named.

1039. CALLITRICHE INTERMEDIA Hoffm., var. HOMOIOPHYLLA (Gren. & Godr.). In deep water at Milton of Morenish, Loch Tay, 1905. On this plant A. Bennett (*Ann. Scot. Nat. Hist.* 122, 1911) says the leaves are 1½ to 2 inches long, with the apex separated into a complete claw-like end twice the width of the leaf. FRASER.

†1045. LYTHRUM HYSSOPIFOLIA L. Bradford, York, CRYER.

1046. EPILOBIUM ANGUSTIFOLIUM L., var. BRACHYCARPUM Leight. Dunfermline, Fife, not native. TEMPLEMAN.

†1061. OENOTHERA BIENNIS L., var. PARVIFLORA (L.). Harefield, Middlesex, DRUCE; Aberdare, Glamorgan, RIDDELSDELL.

†1063. Œ. AMMOPHILA Focke. Braunton, N. Devon, COBBE.

†1067. Œ. SINUATA L. Boiling Wells tip, Bristol, WEDGWOOD.

1073. CIRCAEA ALPINA L. Georgetown burn, Cleish, Fife, and var. INTERMEDIA (Ehrh.). Near Blairadam, Fife, TEMPLEMAN.

†1077. MESEMBRYANTHEMUM EDULE L. Saunton Sands, N. Devon, Dr ASHBY!

†1077 (2). TETRAGONIA EXPANSA Thunb. Medley, Oxon, PARRY.

1080. ERYNGIUM CAMPESTRE L. Still at Par, Cornwall, HAYNES.

1082. ASTRANTIA MAJOR L., var. INVOLUCRATA Koch. River side, Beauly, Easterness. DRUCE & WEDGWOOD.

†1083 (2). A. MAXIMA Pall. (HELLEBORIFOLIA Salisb.). Wood, near Middleton in Teesdale, Durham, Mrs WILDE, vide sp. I saw it there in 1909, but omitted to record it.

*1097. APIUM GRAVEOLENS L. Mochras, etc., Merioneth, JONES.

†1101. AMMI MAJUS L. Lucerne field, Eastbourne, Sussex, LOMAX; Evington, Leics, HORWOOD.

†1102. A. Visnaga L. Humberstone allotment, Leics, Horwood.

*1104. Carum verticillatum Koch. Minfordd, Merioneth, Jones; also seen there by Miss Cobbe in 1919.

†1107. C. Bulbocastanum Koch. Cornfield near Cheltenham, Gloster, August 1919, Knight, vide sp. Known for some years as an adventive.

†1109. Prionitis Falcaria Dum. Railway station yard, Barmouth, Merioneth, Cobbe; a large patch, well established in a pasture field, Culham, Oxon, 1919, Parry, specimens distributed this year; near Hook Norton, Oxon, Lamb.

†1125. Scandix iberica Bieb. Near Leckhampton Station, Gloster, 1912, Turner; St Philip's, Bristol, Cobbe.

1126. Anthriscus sylvestris Hoffm., var. latisecta Druce. Very characteristic at Billingshurst, W. Sussex, Druce & Webster; Eltham, Wye, W. & E. Kent; Hambledon, S. Hants; Highclere, N. Hants; Andoversford, E. Gloster; near Gloucester, W. Gloster; Ross, Hereford; Crickhowell, Brecon; Carmarthen; Narberth, Pembroke, Cardigan; Pershore, Worcester; Coleshill, Warwick; Lichfield, Staffs; Shrewsbury, Salop; Ramsey, Hunts; Chatteris, Cambridge; Downham, W. Norfolk; Ranworth, E. Norfolk; Twinstead, N. Essex; Kirby-le-Soken, S. Essex; Stansteadbury, Herts; Sudbury, W. Suffolk; Uxbridge, Middlesex; Newport Pagnell, Bucks; Ampthill, Beds; *St Aubin's, Jersey; Mt. St Michel, Brittany. Var. angustisecta Druce. St Andrews, Fife; Blair Athol, E. Perth; Moy, Easterness; Brahan, Avoch, Bonarbridge, E. Ross; Ullapool, W. Ross; Tongue, W. Sutherland; Dornoch, E. Sutherland; John o' Groats, Caithness, all seen in 1919, Druce.

1134. Œnanthe crocata L. Shore, East Mersea, N. Essex, Brown.

1135. Œ. pimpinelloides L. Rudley Marsh, S. Hants, Miss [illegible] and Druce; Virley, N. Essex (Gibson's locality), Brown.

1136. Œ. media Griseb. = silaifolia auct. ang. Somerton, Oxon, Riddelsdell; a northern extension of its range. The habitat is close to the Northamptonshire border into which county it may extend.

1138. Œ. FISTULOSA L., var. TABERNAEMONTANI DC. Whittlesey, Hunts. DRUCE.

1144. LIGUSTICUM SCOTICUM L. In shell sand. John o' Groats. DRUCE.

†1153. HERACLEUM VILLOSUM Fisch. Great Tew, Oxon. RIDDELSDELL; North Queensferry. Fife. TEMPLEMAN.

1154. H. SPHONDYLIUM L. Dwarfed to 4 inches in sand at Farr, W. Sutherland: with variegated leaves at Stanton St John, Oxon. DRUCE.

†1157. CORIANDRUM SATIVUM L. Near Swaffham, W. Norfolk, REYNOLDS; near Ryde, Isle of Wight, Miss VIVIAN; garden weed, Pyrford, Surrey, Lady DAVY.

1172. HEDERA HELIX L., var. SARNIENSIS Druce. La Haule, St Catherine's, Jersey, there the prevailing form. DRUCE. Var. BOREALIS Druce. Two or three plants at Pyrford, Surrey. Lady DAVY.

[1173. CORNUS SANGUINEA L. Merioneth, to be confirmed. As yet no corroboration.]

†1175. C. STOLONIFERA Michx. Water-break-its-neck, Radnor. TODD.

1176. ADOXA MOSCHATELLINA L. Kiel's Den, Largo, Fife. TEMPLEMAN.

1181. VIBURNUM LANTANA L. Gogar, Linlithgow. TEMPLEMAN.

†1187. LONICERA XYLOSTEUM L. Loughor, Glamorgan. SKERROW; Cardoxton-juxta-Neath, Glamorgan. WEBB; Great Tew, Oxon. RIDDELSDELL; Lochlornie Burn, Blairadam, Fife. TEMPLEMAN; Brahan Castle grounds, E. Ross. DRUCE; Harlech, Merioneth. JONES. Adventive in all the foregoing localities.

*1192. GALIUM BOREALE L. Cader Idris, etc., Merioneth, JONES.

*1194. G. ERECTUM Huds. On railway bank, Arnside, Westmoreland, BAILEY, 1874, as *saxatile;* Dalgety, Fife, TEMPLEMAN; Barmouth Junction, Merioneth, RUDDY.

1196. G. PUMILUM Murr. Goring, Oxon, 1919, a recent introduction, DRUCE.

*1197. G. ULIGINOSUM L. Llanderfel, Merioneth, RUDDY, ex JONES.

†1210. ASPERULA ARVENSIS L. Evington, Leics, HORWOOD.

*1217. VALERIANA DIOICA L. Bog, Llanderfel, Merioneth, RUDDY.

†1218. V. PYRENAICA L. Naturalised at W. Linton, Peebles, TEMPLEMAN.

*1229. DIPSACUS SYLVESTRIS L. Dyffryn, Merioneth, JONES.

†1244 (3). SOLIDAGO SEROTINA Ait. Claygate, Surrey, BRITTON.

†1250. ASTER SALIGNUS Willd. Near Byfleet, Surrey, Lady DAVY & DRUCE.

†1251 (2). A. LANCEOLATUS Willd. A. SALICIFOLIUS Lam., non alior. A. BELLIDIFOLIA Willd. A. PRAEALTUS Poir. A. FRUTESCENS Wimm. See Thell. in *Allgem. Bot. Zeit.* xix., 134, 1913. Hawkesbury Upton, W. Gloster, 1907, WHITE; Marston Brickyards, Oxon, DRUCE.

†1254. A. LONGIFOLIUS Lam. (SALIGNUS Bab.). Banks of Tay, M. Perth, 1869, J. B. SYME; Harlech, Merioneth, DRUCE.

†1254 (3). A. SALICIFOLIUS Ait. Marston, Oxon, DRUCE, teste Kew.

†1255. A. NOVI-BELGII L. Bournemouth, S. Hants, 1896, PALMER; Glamorgan, WEBB; Ware, Herts; Beaumaris, Anglesey,

DRUCE; Wicken Fen, Cambridge, 1899, LYNCH, as *salignus*. This record may explain the discordant naming of the Fen plant. It seems that both this and *salignus* occur. Marston, Oxon; Port Madoc, Merioneth, DRUCE; wood between Coniston and Torver, W. Lancs, COMBER; shore of Derwentwater 1868, EDMONDS (*Rep. B.E.C.* 10, 1868); Ullswater, Cumberland, BAKER; Tayside, M. Perth, 1918, DRUCE.

†1256. A. VERSICOLOR Willd., em. Thell. Raw dykes, Leics, 1904 BELL; Ashley, near Milton, S. Hants, CUMMING, as *lanceolatus*. See *Rep. B.E.C.* 110, 1917, teste Thellung, who corrects my identification.

†1257 (2). A. NOVI-ANGLIAE L. Marston, Oxon, DRUCE.

1258. A. TRIPOLIUM L., var. DISCOIDEUS Reichb. Barna, Galway, also with all blue flowers, TRETHEWY.

1261. ERIGERON ACRE L. * Harlech, Merioneth, JONES. Var. CORYMBOSUM Wallr. Near Chalfont, Bucks; Kidderminster, Worcester, DRUCE.

†1268. FILAGO GALLICA L. In fields, introduced with hay, Llanderfel, Merioneth, RUDDY, sp. non vidi.

1269. F. MINIMA Fries. Near Dolphinton, Peebles, TEMPLEMAN.

1270. ANTENNARIA DIOICA Br. Near Owlesbury, S. Hants, RAYNER; on limestone at Mumbles Head, Glamorgan, WEBB; Maentwrog Valley, Merioneth, a fine clump, COBBE.

†1271. ANAPHALIS MARGARITACEA C. B. Clarke. Yarcombe, S. Devon, HAYNES; between Crymmych & Llanfynach, Pembroke, DRUCE; Barmouth Junction, Merioneth, JONES; Bickram Village, Saline, Fife, a relic of cultivation, TEMPLEMAN.

1279. INULA HELENIUM L. Harlech, etc., Merioneth, JONES.

*1285. PULICARIA DYSENTERICA Gaertn. Aberdovey, Merioneth, JONES.

†1292. AMBROSIA TRIFIDA L. Addlestone, Surrey, LOYDELL; North Queensferry, Fife, with 1291. A. ARTEMISIFOLIA, TEMPLEMAN.

†1301. HELIANTHUS ANNUUS L. Patricroft, S. Lancs, HELSBY; N. Queensferry, Fife, TEMPLEMAN; Beaumaris, Anglesey, DRUCE.

†1302. H. GIGANTEUS L. Woodhall, N. Lincs, ALSTON; St Philip's, Bristol; Botley, Oxon, DRUCE; Colchester, BROWN.

†1306. GUIZOTIA ABYSSINICA Cass. St Philip's, Bristol, SANDWITH.

*1309. BIDENS CERNUA L. Towyn, Merioneth, RUDDY.

†1314. MADIA SATIVA Mol. Welbeck, Notts, GOULDING.

†1315. HEMIZONIA PUNGENS T. & G. St Philip's, Bristol, COBBE; Colchester, N. Essex, BROWN; N. Queensferry, Fife, TEMPLEMAN.

†1317. H. KELLOGGII Greene. N. Queensferry, Fife, TEMPLEMAN.

†1323. ANACYCLUS CLAVATUS Pers. Cardiff, Glamorgan, RIDDELSDELL; St Philip's, Bristol, DRUCE.

†1328. ACHILLEA LIGUSTICA All. Monks Meadow, W. Gloster, 1913, ex RIDDELSDELL.

1329. A. MILLEFOLIUM L., var. LANATA Koch. Rottingdean, Sussex, 1909, DRUCE. Var. CONSPICUA Druce. Caistor, E. Norfolk; Wellingborough, Northants, DRUCE.

†1331. A. NOBILIS L. Pettycur, Fife, W. R. LINTON. (See *Rep. B.E.C.* 294, 1907.)

1334. A. PTARMICA L. Galled specimens (*Rhopalomyia Ptarmicae* Vallot.), Askham Bog, York, INGHAM.

†1336. SANTOLINA CHAMAE-CYPARISSUS L. Hortal escape, Llanberris, Carnarvon, DRUCE.

†1340. ANTHEMIS COTA L. (ALTISSIMA). St Philip's, Bristol, DRUCE; Ware, Herts, HIGGENS; Dewsbury, York, HORRELL.

†1341. A. AUSTRIACA Jacq. Ware, Herts, HIGGENS.

†1341. A. RUTHENICA Bieb. Dewsbury, York, HORRELL; Ware, Herts, HIGGENS.

1353. CHRYSANTHEMUM LEUCANTHEMUM L. At 2,000 feet on Snowdon, DRUCE.

†1356. C. MACROPHYLLUM W. & K. Starleyburn, Burntisland, Fife, TEMPERLEY.

†1356. C. LATIFOLIUM DC. (LACUSTRE Brot.). North Leigh, Oxon, 1907, DRUCE.

†1356 (7). C. MAXIMUM DC. Arbroath, Forfar, DRUCE.

†1357. C. CORONARIUM L. N. Queensferry, Fife, TEMPLEMAN; Dewsbury, York, HALEY.

1360. MATRICARIA INODORA L., var. DISCOIDEA Celak. Pyrford, Surrey, Lady DAVY & DRUCE; Hayes, Middlesex, LOYDELL.

†1362. M. SUAVEOLENS Buch. Wellingborough, Northants; Cors Bodeilio, Anglesey; St Andrews, Fife; Inverness, DRUCE.

†1363. M. DECIPIENS C. Koch. Boiling Wells tip, Bristol, WEDGWOOD.

†1363 (3). M. DISCIFORMIS DC. St Philip's, Bristol, COBBE.

1367. ARTEMISIA ABSINTHIUM L. Beaumaris, Anglesey, GRIFFITH & DRUCE.

[1376. A. MARITIMA L. Barmouth Common, Merioneth, PURTON. Requires confirmation.]

†1378. A. STELLERIANA Bess. N. Queensferry Cliffs, Fife, TEMPLEMAN, a garden escape.

†1381. A. BIENNIS Willd. St Philip's, Bristol, SANDWITH. This is probably the *Tournefortiana* of the notes to the *Flora of Bristol.*

†1383. A. GNAPHALODES Nuttall. Beaumaris, Anglesey, DRUCE, teste THELLUNG; Leith, Midlothian, FRASER.

†1385. PETASITES FRAGRANS Presl. Llanbedr, Merioneth, JONES.

†1388. DORONICUM PARDALIANCHES L. Naturalised in wood, Llanderfel, Merioneth, RUDDY; Shropham, Norfolk, ROBINSON.

†1390. SENECIO SARRACENICUS L. Turners Hill, E. Sussex, WEBSTER.

†1391. S. DORIA L. Marston, Oxon, DRUCE.

†1396. S. SQUALIDUS L. Saltney, Flint, COBBE. × VULGARIS. Oxford. See *Rep. B.E.C.* i., 184, 337, 374, ii., 228. Reading, Berks, 1905; Cork, Ireland; cult. at Balmuto, Fife, by Syme, as *S. vernalis* W. & K. Dr Thellung agrees with me in referring the above mentioned plants to this hybrid.

†1399. S. VISCOSUS L. A railway immigrant. Peterborough, Northants, DRUCE; Saltney Wharf, Flint, COBBE.

1400. S. SYLVATICUS L. A glabrescent form on Cwm Meilionem, Carnarvon, WEDGWOOD & JONES.

1401. S. VULGARIS L. The segregates *S. praecox*, *erectus* var *radiatus*, *rubricaulis* and *multicaulis* are all found in W. Glamorgan by TROW.

†1411. CALENDULA ARVENSIS L. Ware, Herts, HIGGENS; Colchester, BROWN.

†1412 (10). ECHINOPS SPHAEROCEPHALUS L. Garden escape at Compton, Berks, DRUCE.

1418. ARCTIUM LAPPA × VULGARE. Burpham, W. Sussex, EVANS.

*1422. CARDUUS NUTANS L. Llanderfel, Merioneth, RUDDY.

1424. C. EU-CRISPUS L. Walmer. Kent, F. J. SMITH.

1430. CIRSIUM PRATENSE Druce, var. POLYCEPHALUM Druce. Llandrindod, Radnor, TODD.

1433. C. ARVENSE Scop., var. MITE Koch. Stourport, Worcester, HUMPHREYS. † Var. SETOSUM C. A. Mey. Crymlyn, Glamorgan, WEBB; Kidderminster, Worcester, abundant, DRUCE; Dunbar, Haddington, TEMPLEMAN.

1434. C. PALUSTRE Scop., var. FEROX Druce. Bathford Hill, N. Somerset, ROPER; Aviemore, Easterness; Dornoch, E. Sutherland, DRUCE.

†1442. CYNARA CARDUNCULUS L. Bexhill, Kent, GREEN.

*1449. CENTAUREA JACEA L., agg. Near Wellington College, 1919, BRITTON, of comparatively recent introduction.

1451. C. PRATENSIS Thuill. Delapré, Northants, 1873; Epsom, Surrey, BRITTON; Rescobie, Forfar, DRUCE; Wellington College, Berks, BRITTON.

1451. C. NEMORALIS Jord. Cambridge, DRUCE; Worcester Park, Merton, Headley, Sunbury Lock, Surrey, BRITTON, teste LACAITA; Hungerford, Berks, DRUCE; Ditcham Park, Hants, ADAMSON.

*1454. C. CYANUS L. Llanderfel, occasionally, Merioneth, RUDDY.

1456. C. SCABIOSA L., var. GELMII Briq. Effingham, Surrey, 1917, BRITTON.

†1463. C. MELITENSIS L. Llanberris, Carnarvon, COBBE & DRUCE.

†1477. CARTHAMUS TINCTORIUS L. Hertford, GRAVESON; Marston, Oxford, DRUCE; Dublin, in manured fields, GRIERSON.

†1495. CREPIS NICAEENSIS Balb. Field on left hand going from Seatoller to Seathwaite, Cumberland, ADAMS.

1502. C. TARAXACIFOLIA Thuill. Llandilo, Brecon; Carmarthen; Haverford West, Pembroke; Beaumaris, Anglesey, DRUCE.

*1503. HIERACIUM PELETERIANUM Mérat. Near Wadebridge, Cornwall, WEDGWOOD.

†1509. H. PRATENSE Tausch. Brislington, N. Somerset, ROPER.

†1512. H. AURANTIACUM L. Aspergy, Glamorgan, WEBB; Crymmych, Pembroke, ARNETT; Cleish, Fife, TEMPLEMAN.

1641. HYPOCHOERIS GLABRA L. Newborough Sands, Anglesey, COBBE. Var. ROSTRATA C. & G. Near the Gimlet rock, Pwlheli, Carnarvon, COBBE.

1645. TARAXACUM LAEVIGATUM DC. Llandilo, Carmarthen; Crickhowell, Brecon; Newport, Pembroke; Galashiels, Selkirk, DRUCE.

*1646. T. PALUSTRE DC. Llanderfel, Merioneth, RUDDY.

1646. T. SPECTABILE Moy. Easterness; Braemore, W. Ross, BAINES; Chalvey, Bucks, DRUCE; Barnes, Surrey, W. A. TODD.

1649. LACTUCA SERRIOLA L. Porthcawl Dock, Glamorgan, WEBB; in hedges, Kirby-le-Soken, S. Essex, DRUCE.

†1650. L. SALIGNA L. Port Talbot, Glamorgan, Miss WAKEFIELD.

1656. SONCHUS ARVENSIS L., var. GLABRESCENS G. G. & W. East Mersea, N. Essex, BROWN.

1657. S. ASPER Hill, var. PUNGENS Bisch. Ramsey, Hunts; Brocton, Staffs; Tenby, Pembroke, DRUCE. Var. INTEGRIFOLIUS Wallr. Ramsey, Hunts; Eye, Northants; Brocton, Staffs; Crickhowell, Brecon; Tenby, Pembroke; Carmarthen, DRUCE.

1658. S. OLERACEUS L., var. ALBESCENS Neum. Tenby, Pembroke; Beaumaris, Anglesey, DRUCE. Var. TRIANGULARIS Dum. Wilsford, Wilts; Cothill, Berks; Studley, Oxon. DRUCE.

†1660. TRAGOPOGON PORRIFOLIUS L. Bexhill, Kent. GREEN.

†1665. LOBELIA ERINUS L. Southport, Lancs, 1905. FIRTH.

†1670. CAMPANULA MEDIUM L. Wall top, Tenby, Pembroke; Crickhowell, Brecon, DRUCE.

†1676. C. PERSICIFOLIA L. A solitary plant about 2 miles from Carmarthen, HAMER, *in litt.*

1687. OXYCOCCUS QUADRIPETALUS Gilib. In plenty on Moss Morran, Aberdour, Fife, with var. PYRIFORMIS Druce, TEMPLEMAN.

†1691. GAULTHERIA SHALLON Pursh. Castlehill, Parkstone, Dorset, in considerable quantity and bearing fruit, FINLAYSON.

*1692. ANDROMEDA POLIFOLIA L. Aberdoven, Pughe, Arthog, Merioneth, 1904, JONES.

1695. ERICA TETRALIX L., var. or lusus FISSA Druce in Rep. B.E.C. 329, 1913. Aviemore, Easterness, NOEL SMITH; Sow of Athol, M. Perth, CORSTORPHINE; moorland above Tongue, W. Sutherland, DRUCE.

1711. LIMONIUM HUMILE Mill. Kirby-le-Soken, S. Essex, DRUCE.

1715. L. LYCHNIDIFOLIUM O. Kuntze, var. CORYMBOSUM Salm. In fresh localities on the coast near Crabbe, Jersey, ATTENBOROUGH. It was interesting to see it here in good quantity and in places where it is fairly safe from extirpation.

†1720. STATICE PLANTAGINEA All. Levenhall, near Edinburgh, FRASER.

1721. S. LINEARIFOLIA Lat. Newport, Pembroke; Berriedale, E. Sutherland, DRUCE.

1721 (2). S. PLANIFOLIA Druce. Snowdon, Carnedd Llewellyn, Carnarvon, DRUCE.

1726. PRIMULA VERIS L. *Llanfair, Merioneth, JONES; with double umbels at Donibristle, Fife, TEMPLEMAN; flowers on pedicels 1½ inches long, Bordon, Wilts, TODD.

*1727. P. FARINOSA L. With flowers on pedicels two inches long, West Linton, Peebles, TEMPLEMAN.

†1731. CYCLAMEN HEDERIFOLIUM Ait. Naturalised in a shrubbery, Inworth, Essex, ex Canon VAUGHAN.

*1733. LYSIMACHIA VULGARIS L. Llyn Hafody Llyn, 500 feet, &c., Merioneth, JONES.

†1745. ANAGALLIS FEMINA Mill. Possil, Glasgow, GRIERSON. This name was used for it in the earliest herbarium known, Gherardo Cibo of 1532.

*1745. CENTUNCULUS MINIMUS L. Glen Nant, Argyll, LESTER-GARLAND, *in litt.*

†1747. SYRINGA VULGARIS L. In hedge, Haywood, Staffs. DRUCE

†1750. VINCA MAJOR L. Relic of garden, Beaumaris, Anglesey; Arthog, &c., Merioneth, JONES; Haywood, Staffs, DRUCE; N. Queensferry, Fife, TEMPLEMAN.

†1751. V. MINOR L. Harlech, &c., Merioneth, JONES.

1754. CENTAURIUM UMBELLATUM Gilib., var. CAPITATUM (Koch). Gullane, Haddington, TEMPLEMAN.

1755. C. VULGARE Rafn., f. or var. MINOR Hartm. Newborough, Anglesey, DRUCE.

1757. C. PULCHELLUM Druce. Near Bexhill, Kent, GREEN; Harlech, Merioneth, DRUCE.

1763. GENTIANA AMARELLA L. In full flower, Nov. 14, Tenby, Pembroke, ARNETT.

†1765. G. ACAULIS L. On a common at Amberley, Stroud, near a foot-path leading across it to the Priory Church, March 1919. Mrs DUNCAN TRAVERS, ex Rev. J. BUXTON. Doubtless planted there.

†1768. COLLOMIA GRANDIFLORA Dougl. Skegness, N. Lincs, B. REYNOLDS.

†1769. C. LINEARIS Nutt. (COCCINEA). N. Queensferry, Fife, TEMPLEMAN; Anniesland, near Glasgow, GRIERSON.

†1777. POLEMONIUM CAERULEUM L. By a copse side on the Downs, above Littlehampton, W. Sussex, Miss ROBLEY.

†1778. PHACELIA CILIATA Benth. Par Harbour, Cornwall, THURSTON & RILSTONE.

†1779. P. PARVIFLORA Pursh. St Philip's, Bristol, COBBE; Burton-on-Trent, Derby, CHIPPERFIELD.

†1787. LAPPULA ECHINATA Gilib. Lanarth, Cornwall, Miss WILLIAMS; Llanberris, Carnarvon, COBBE; N. Queensferry, Fife, TEMPLEMAN.

†1789 (2). BENTHAMIA ANGUSTIFOLIA Druce. Exmouth, S. Devon; Llanberris, Carnarvon, COBBE.

†1789 (3). B. LYCOPSIOIDES Lindl. Colchester, BROWN; Ware, Herts, KNOWLING; Kilsby, Northants, CUMMING; Narborough, Leics, WADE; N. Queensferry, Fife, TEMPLEMAN.

†1789 (5). B. INTERMEDIA Druce. Welbeck, Notts, GOULDING; Wells-on-Sea, Norfolk, 1916; Watton, W. Norfolk, ROBINSON.

*1790. SYMPHYTUM OFFICINALE L. Llanderfel, Merioneth, JONES.

†1800. ANCHUSA OFFICINALIS L. Barmouth, Merioneth, COBBE.

†1802. A. AZUREA Mill. Walton, S. Lancs, 1912, WHELDON.

†1808. PULMONARIA OFFICINALIS L. Baldon, Oxon, DRUCE.

†1817. MYOSOTIS SYLVATICA Hoffm. Donibristle, Fife, TEMPLEMAN.

*1821. M. VERSICOLOR Sm. Common at Harlech, Merioneth, JONES. Completes comital distribution. Var. LUTEA (Pers.). With bright golden flowers, Strathpeffer, E. Ross, DRUCE.

*1822. LITHOSPERMUM OFFICINALE L. Castle moat, Harlech, Merioneth, JONES.

1824. L. ARVENSE L. Llanderfel, Merioneth, RUDDY. Var. MEDIUM (Chev.). St Philip's, Bristol, COBBE.

1831. VOLVULUS SEPIUM Medic, var. COLORATUS Lange. Stow, W. Norfolk, DRUCE & ROBINSON.

†1831 (3). V. DAHURICUS (Sims) Druce. Grange-over-Sands, Lancs, 1895, ROPER, *in litt.*

†*1840. CUSCUTA TRIFOLII Bab. Pale, Merioneth, RUDDY.

†1843. C. SUAVEOLENS Mart. Near Cardiff, Glamorgan, perhaps introduced with Chilean red clover, PETTIGREW, ex Miss VACHELL.

†1848. SOLANUM ROSTRATUM Dunal. St Philip's, Bristol, COBBE & SANDWITH.

†1849. S. TRIFLORUM Nutt. Hertford, GRAVESON.

†1852. NICANDRA PHYSALOIDES Gaertn. Cornfield at Failand, N. Somerset, in quantity, SANDWITH, vide sp.

†1853. LYCIUM CHINENSE Mill. Newport, Pembroke, DRUCE.

†*1861. VERBASCUM THAPSIFORME Schrad. Near Holford, S. Somerset, Aug. 12, 1919, looking truly wild, but scarce and local, a much finer flowered plant than *Thapsus*, E. S. MARSHALL, *in litt.* See also *Journ. Bot.* 257, 1919.

†1864. V. BLATTARIA L. With yellow flowers, West Malling, Kent, 1919, H. GRAY.

1867. V. NIGRUM × THAPSUS = × V. COLLINUM Schrad. Between Hursley and Winchester, S. Hants, RAYNER.

†1868. V. AUSTRIACUM Schott. Woodhall, Lincs, ALSTON.

†1869. V. CHAIXII Vill. Ware, Herts, HIGGENS.

†1871. CELSIA CRETICA L. Dudbridge railway, W. Gloster, 1907, BAILEY.

†1877. LINARIA PURPUREA Mill. Kingsdown, E. Kent, MARRIOTT.

†1878. L. REPENS Mill. On the railway, Minffordd, Merioneth, COBBE; on railway, Hallend, Inverkeithing, Fife, TEMPLEMAN; Forres, Elgin, 1901, BAILEY, as *purpureum*. × VULGARIS. Eling, S. Hants, RAYNER; railway side, near Ruislip, Middlesex, DRUCE.

†1879. L. CHALEPENSIS Mill., f. CLEIOSTOGAMA Thell. Elland, York, PULLAN.

†1880. L. PELISSERIANA Mill. Swansea Dock, Glamorgan, SKERROW.

†1886. L. CYMBALARIA Mill. With white flowers, Brandon Bridge, W. Norfolk, W. G. CLARKE.

†1889. ANTIRRHINUM MAJUS L. Beaumaris, Anglesey, DRUCE.

†1891. SCROPHULARIA VERNALIS L. Den, Logie, Fife, TEMPLEMAN.

*1893. S. ALATA Gilib. Spittal Haugh, W. Linton, Peebles, 1914, TEMPLEMAN. Better specimens are desirable but I have little doubt it belongs to this species.

†1898. MIMULUS GUTTATUS DC. The yellow form of this species was specially abundant and in profuse flower in the dry sunny July of 1919 along the banks of the Eden, Don, Teith, Dee, Garry, Earn, Tay, Beauly, Tweed, Gala, Conan, etc., and in some places grew to four feet high. The shingle beds of the partly dried streams were

often a mass of gold from the profusion of the blossoms, influenced doubtless by the warm, sunny July, DRUCE.

†1904. ERINUS ALPINUS L. Strathblane, Stirling, GRIERSON.

*1905. VERONICA SPICATA L. Arnside, L. Lancs, PEARSALL. Determined as distinct from *hybrida* by Dr Thellung. In my judgment one should be placed as a variety of the other, DRUCE.

1915. V. ANAGALLIS-AQUATICA L. Hambledon, S. Hants, DRUCE.

*1915 (2). V. AQUATICA Bern. Swainsthorpe, W. Norfolk; Wisbech, Cambridge; Ramsey, Hunts, DRUCE.

*1926. V. HEDERIFOLIA L. Harlech, Merioneth, JONES.

1933. EUPHRASIA BREVIPILA B. & G. Morridge, N. Staffs, S. A. BENNETT.

1934. E. NEMOROSA H. Mart., var CILIATA Drabble. Between Cwm-y-Glo and Bangor, Carnarvon; Bodeilio, Anglesey, DRUCE.

1934 (2). E. CAMPESTRIS Jord. In two or three spots about Llanberris, Carnarvon, ARMITAGE & DRUCE; Blackdown, Mendip, W. Somerset (as near to *campestris* as we have in Britain, teste Bucknall), ROPER.

1936. E. OCCIDENTALIS Wettst., var. PRAECOX Buckn. Near Cardiff, Glamorgan, RICHARDS.

1940. E. SCOTICA Wettst. A form very nearly naked, Cwm Afon Las, Carnarvon, ARMITAGE; Tan-y-Bwlch, Merioneth, COBBE; Cnochan, W. Ross; Tongue, W. Sutherland, DRUCE.

1940 (2). E. MINIMA Fr. Cabrach, N. Aberdeen; Dornoch, E. Sutherland, DRUCE.

1941. E. ROSTKOVIANA Hayne. On Silurian slate, Bettws-y-Coed, BENNETT; Tan-y-Bwlch, Merioneth, COBBE.

1943. E. KERNERI Wettst. Mold. Flint, BENNETT; Southport, S.W. Lancs, 1892, BAILEY.

1954. RHINANTHUS STENOPHYLLUS Schur. Yate Lower Common, W. Gloster, ROPER.

1955. R. MONTICOLA Druce. At 1,100 feet, Glen More, Easterness, DRUCE.

1960. MELAMPYRUM PRATENSE L., var. SCOTIANUM (Beauv.). M. PRATENSE, var. ALPESTRE, sub-var. SCOTIANUM. *On moorland among *Sphagnum* and *Erica Tetralix* above Tongue, W. Sutherland, June, 1919, Mrs PAUL ASCHERSON, vide sp., growing scattered and in small quantity. Subsequently Mrs Wedgwood and I found it in similar association at Altnaharra, W. Sutherland. These were very beautiful plants in which a margin about 1-2 mm. wide of deep carmine edged the corolla, the throat of which was a rich yellow, the tube being very pale yellow. Smaller plants more diffused with purple occurred in *Sphagnum* on the north slopes of Cairngorm, Easterness, DRUCE. It is not gregarious as so many of its allies.

1974. LATHRAEA SQUAMARIA L. Introduced at Llandderfel, Merioneth, RUDDY.

†1974 (2). L. CLANDESTINA L. Near Coalhurst Pond, St Leonards Forest, Sussex, May 1919, Miss SOUNDY. In this station it was deliberately planted some time ago.

*1975. UTRICULARIA VULGARIS L. With *U. minor* near Barmouth, Merioneth, JONES.

1981. PINGUICULA ALPINA L. Now extinct at Avoch, E. Ross, owing to seedling conifers drying the bog in which it formerly grew. No actual habitat now known.

1982. P. LUSITANICA L. Still surviving near Aldershot, Hants, Mrs GIBSON.

1984. VERBENA OFFICINALIS L. Roadside near Beaumaris, in the locality mentioned by the Rev. H. Davies about 1810. For twenty years Mr Griffith was unable to find it, when one year it suddenly reappeared in some quantity. In 1919 there were a few plants, DRUCE.

1988. MENTHA ROTUNDIFOLIA Huds. Harlech, Merioneth, DRUCE; on left bank of Dochart, Mid Perth, FRASER & HAGGART; Limpley Stoke, N. Wilts, BAILEY.

*1989. M. ALOPECUROIDES Hull. John o' Groats, Caithness, in some plenty by a stream, DRUCE.

1990. M. LONGIFOLIA Huds. †*Troedy Foel, Merioneth, JONES. Var. NICHOLSONIANA (Strail). *Garnant, Glamorgan, WEBB; Beaumaris, Anglesey, DRUCE. Var. MOLLISSIMA (Borck.). Lower Liberton, Edinburgh, FRASER, teste A. BENNETT. Var. VILLOSA (Huds.). Great Henny, N. Essex, HIGGENS; Bulls Green, Hertford, GRAVESON; Newland, Forest of Dean, W. Gloster, 1910, BAILEY, as *longifolia*.

†1991. M. SPICATA L. In some quantity, North Leigh Common, Oxon; Pyrford, Surrey, DRUCE: Llwyngwril, Merioneth, PERCIVAL.

1993. M. PIPERITA L. Quite naturalised at Boat of Garten, Easterness, a recent introduction: it was not there in 1886; Tongue, W. Sutherland, DRUCE.

1996 *h*. M. ACUTIFOLIA Sm. J.F. (*Gardener's Chronicle* ii., 264, 1919) asks what is it? He found it in the Medway Valley, Kent, its original habitat, and considers it " more distinct from the three segregates of *M. sativa* than they are from one another. All the three described forms of *M. sativa* lean towards the *hirsuta* parent in having broad leaves, rounded at the base, while the leaves of *acutifolia* taper to both ends, as in the *arvensis* parent, and that is the broad distinction. *M. acutifolia* runs through all the variations of *M. sativa* and perhaps more, for I have spicate, capitate, and sub-glabrous forms as well as many other variations. One so closely resembles *M. arvensis* in size and form that the chief distinction from the latter lies in the long teeth of the calyx. *M. acutifolia* is most often sub-glabrous or thinly hairy, but I have a form from Surrey that is as hairy as *sativa*, var. *rivalis*, and another from Bucks that has exceptionally narrow leaves."

†1997. M. gentilis L. Blackhills, Gower, Glamorgan, Webb, better specimens desirable; Llwyngwril, Merioneth, Percival.

†1998. M. cardiaca (Baker). Waste ground, Beaumaris, Anglesey, Druce.

†1999. M. rubra Sm. Dochart Bridge, Milton of Morenish, Craignavie, Mid Perth, Fraser & Haggart.

2001. M. Pulegium L. *Llanderfel, Merioneth, on wet waste ground, Ruddy; Dean Clough, Halifax, York, Horrell.

2003. Lycopus europaeus L., var. glabrescens (Schm.). Baldon, Oxon; near Buckingham; Swainsthorpe, W. Norfolk; near Fishguard, Pembroke, Druce.

2007. Thymus Chamaedrys Fr. In splendid growth near Swaffham, W. Norfolk, Druce; Somersham, E. Suffolk, Brown.

*2011. Satureia Calamintha Scheele, and 2034. Nepeta Cataria L. Between Cross Foxes and Dolgelly, Irvine & Pamplin in *Phyt.* 1855. Confirmation desirable.

†2025. Salvia nemorosa L. Port Talbot, Glamorgan, Wakefield, ex Webb; Goring, Oxford, established over 20 years, Parry.

†2031. S. verticillata L. Warlingham, Surrey, P. Greenfield; West Kirby, Chester, Cobbe.

†2039. Dracocephalum parviflorum Nutt. N. Queensferry, Fife, Templeman.

†2041. Lallemantia iberica F. & M. With small flowers, approaching *L. Royleanum*, at St Philip's, Bristol, Cobbe, teste Thellung.

*2047. Melittis Melissophyllum L. Estuary of the Mawddach, Merioneth, Warner in *Science Gossip* 1878. Confirmation needed.

†2048. Sideritis montana L. Elland, York, Horrell; Beauly Abbey, S. Hants, Melville, vide sp.

†2048 (2). S. ROMANA L. Kirkstall, York, PULLAN.

†2049. MARRUBIUM VULGARE L. Old race course, Morfa, Merioneth, JONES.

†2053. STACHYS ITALICA L. St Philip s, Bristol, DRUCE.

2056. S. SYLVATICA L., as a lusus. See *Rep. B.E.C.* 114, 1911. Sent from Tewkesbury, Gloster, by the Rev. F. A. STONE.

2056. × S. AMBIGUA Sm. *Near Cirencester, E. Gloster, GREENWOOD; Llanberris, Carnarvon, COBBE; Tongue, W. Sutherland, DRUCE, removes ? in *Top. Bot.* * Dolgelly, Merioneth, JONES.

2065. LEONURUS CARDIACA L. Aberdovy, Merioneth, JONES.

*2068. LAMIUM ALBUM L. Harlech, etc., rare, Merioneth, JONES.

2072. L. HYBRIDUM Vill. La Haule, Jersey, DRUCE.

*2075. L. GALEOBDOLON Crantz. Llanfedr. etc., Merioneth, locally common, JONES.

2083. AJUGA REPTANS L. By roadside near Sevenoaks, Kent, Dr GATES; near Greenham Common, Berks, Dr OLIVE C. RAYNER as var. or sub-var. PURPUREA; a long straggling plant with slender branches and small verticillasters sent from Edenbridge, Kent, by Mr G. TALBOT; as a very handsome form with dark blue flowers, near Long Melford, W. Suffolk, Miss STAFFORD ALLEN. The year 1919 was noticeable for the abundant and showy flowering of this species.

2091. PLANTAGO MARITIMA L., var. LATIFOLIA Syme. Fine examples by the tidal river, Beauly, Easterness, DRUCE.

†2095. P. LAGOPUS L. Llanberris, Carnarvon, COBBE.

†*2098. P. MEDIA L. Llanderfel, Merioneth, RUDDY.

†2100. P. VIRGINICA L. Greenham Common, Berks, 1915, V. MURRAY.

†*2102. ILLECEBRUM VERTICILLATUM L. Mysteriously introduced at Pale, Merioneth, since 1872, RUDDY.

2106. LITTORELLA UNIFLORA Asch. This, or *Lobelia Dortmanna*, is the *Isoetes* from Lough Magillie, Wigton, 1883, BAILEY.

†2112. AMARANTHUS RETROFLEXUS L. St Leonards, Bucks, GREGOR; Eton, Bucks; Abingdon, Berks; Hay, Brecon, DRUCE; Woodhall, Lincs, ALSTON; Leeds, HORRELL. Var. DELILEI Thell. Aldburgh, E. Suffolk; Acton, Middlesex, DRUCE; Clare, W. Suffolk, LITTLE; near Thetford, W. Norfolk, ROBINSON; Abbey Wood, W. Kent, MARRIOTT; Drayton, Bucks; Par, Cornwall, DRUCE; St Philip's, Bristol, COBBE; Bedminster, Bristol, SANDWITH; Aberdare, Glamorgan, RIDDELSDELL.

†2112 (2). A. ASCENDENS Lois. Chelsea, 1848, MOORE; Turnham Green, Middlesex, 1876, SIM.

†2113 (2). A. THUNBERGII Moq., f. MACULATUS. Langley, Bucks, COBBE.

†2114. A. ALBUS L. St Philip's, Bristol, DRUCE; Eastville, Bristol, SANDWITH; Pyrford, Surrey, Lady DAVY; Abbey Wood, W. Kent, MARRIOTT.

†2114 (2). A. DINTERI Schinz. var. UNCINATUS Thell. Guildford, Surrey, DRUCE; Galashiels, Selkirk, HAYWARD.

†2115. A. DEFLEXUS L. Port Talbot, Glamorgan, 1902, DRUCE.

2117. CHENOPODIUM RUBRUM L. *Barmouth, Merioneth, JONES. Var. PSEUDOBOTRYODES Wats. Gullane, Haddington, TEMPLEMAN.

2118. C. BOTRYODES Sm. Near North Hayling Station, S. Hants, in plenty, BURDON & EVANS.

2122. C. MURALE L., var. MICROPHYLLUM Gurke. Hertford, GRAVESON; type at Beaumaris, Anglesey, DRUCE.

†2123. C. OPULIFOLIUM Schrad. Wellingborough, Northants, DRUCE.

†2124 (2). C. LANCEOLATUM Mühl. Brocton, Staffs; Wellingborough, Northants, DRUCE.

†2125. C. LEPTOPHYLLUM Nutt. Hertford, GRAVESON; St Cyrus, Kincardine, DRUCE; Saltney Wharf, Flint, COBBE.

†2127. C. GLAUCUM L. Hertford, GRAVESON.

2129. C. POLYSPERMUM L., var. ACUTIFOLIUM Asch. By the heronry, Birch, N. Essex, BROWN.

†2131 (3). C. HIRCINUM Schrad. Drayton, Middlesex, COBBE.

†2131 (8). C. GRAVEOLENS Willd. St. Philip's, Bristol, SANDWITH.

†2133. C. CAPITATUM Asch. Among potatoes, Embley Court, Romsey, and Christchurch, S. Hants, RAYNER.

†2134. C. VIRGATUM Ambrosi. Old White Hill, Aberdeen. TEMPLEMAN.

†2135. (5). MONOLEPIS NUTTALIANA Engelm. Elland, York, HORRELL.

*2138. BETA MARITIMA L. Barmouth, Merioneth, RUDDY.

*2143. ATRIPLEX LITTORALIS L. Barmouth Junction, Merioneth, RUDDY.

2144. A. PATULA L., var. BRACTEATA Wester. Alphamstone, N. Essex, BROWN; Eye, Northants; Woking, Surrey; Botley, Oxford, DRUCE.

†2145. A. TATARICA L. Wakefield, Mirfield, York, HORRELL.

2147. A. HASTATA L., var. OPPOSITIFOLIA Moq. Walton on the Naze, S. Essex, BROWN. Var. MICROTHECA Rafn. Hitchen, Herts, LITTLEBURY.

2149. A. GLABRIUSCULA Edmonst. (VIRESCENS Lange). Mersea Island, N. Essex, BROWN.

*2150. A. MARITIMA Hall. (LACINIATA auct.). Barmouth, Towyn, Merioneth, JONES.

†2151. A. ROSEA L. See *Rep. B.E.C.* 368. 1915. Eastville, Bristol, WHITE & GREEN.

†2151 (10). AXYRIS AMARANTOIDES L. Uxbridge, Middlesex, B. REYNOLDS; Wellingborough, Northants; Brocton Camp, Staffs, DRUCE; Stalybridge, Cheshire, COLLIER, ex TRAVIS.

†2153 (20). BASSIA QUINQUECUSPIS Muell. Meanwood, York, HORRELL.

†2155. KOCHIA SCOPARIA Schrad. Llanfairfechan, Carnarvon, DRUCE.

2158 (2). SALICORNIA DOLICHOSTACHYA Moss. St Osyth, N. Essex, BROWN.

2160. S. RAMOSISSIMA Woods. Jersey, DRUCE.

2161 (3). S. DISARTICULATA Moss. Mersea Island, N. Essex, BROWN.

2176. POLYGONUM TOMENTOSUM Schrank. Garteosh, Lanark, GRIERSON, robust specimen 3-4 feet high; Maentrog, Merioneth, LEY.

2179. P. MINUS Huds. Bala Lake, etc., Merioneth, JONES, confirmation desirable.

*2182. P. RAII Bab. (ROBERTI). Towyn, Barmouth, Merioneth, JONES.

†2183. P. PATULUM Bieb. Port Talbot, Glamorgan, 1904, DRUCE.

2184. P. AVICULARE L.—HETEROPHYLLUM Lindm. Gower, Glamorgan, WEBB.

†2186. P. COGNATUM Meisn., var. ALPESTRE Meisn. Bank of the Avon, in mowing grass, between Bath and Newton St. Loe, N. Somerset, T. H. GREEN.

†2191. P. CUSPIDATUM S. & Z. Railway bank, Wokingham, Berks; Beaumaris, Anglesey; Llanberris, Carnarvon; near Carmarthen; Monmouth, Pembroke; Brecon, DRUCE.

2195. RUMEX MAXIMUS Schreb. Shirehampton, W. Gloster, ROPER; Wilsford, S. Wilts, DRUCE.

†2199. R. ALPINUS L. Aberdour, Fife: Leadburn, Peebles, TEMPLEMAN.

2200. R. OBTUSIFOLIUS L. var. AGRESTIS Fries. Littleport, Cambridge. LITTLE.

†2201. R. SANGUINEUS L. *Raith, Fife, TEMPLEMAN; *Llanderfel, Merioneth, RUDDY.

*2205. R. PULCHER L. Llanderfel, Merioneth, RUDDY.

2206. R. LIMOSUS Thuill. Whittlesey, Hunts: still at Eye, Northants, DRUCE.

2207. R. MARITIMUS L. In Westwood Pool, Worcester, in great quantity, 1919, REA.

†2210 (2). R. SCUTATUS L. Aberdour Castle, Fife, TEMPLEMAN.

†2210 (6). R. SALICIFOLIUS Willd. St. Philip's, Bristol, SANDWITH; Dublin, GRIERSON.

†2211. EMEX SPINOSA Campd. Colchester, BROWN.

2214. DAPHNE LAUREOLA L. Ilston, Cwm, Glamorgan, WEBB.

*2227. EUPHORBIA AMYGDALOIDES L. Near Corris, Merioneth, JONES.

2229. E. VIRGATA W. & K. Hurstpierpoint, Sussex, Miss COUCHMAN; Helsby Station, Chester, WATERFALL. Var. ESULIFOLIA Thell. Ware, Herts, TROWER & DRUCE.

†2230. E. CYPARISSIAS L. Hertford, GRAVESON; near Welwyn, Herts, LITTLE; Wychwood, Oxon, Mrs CLARKE; Hardwick Park,

Oxon, MURRAY; Cole Close, Egremont, as *Pseudocyparissias*, ADAIR; Lytham, Lancs, MELVILL.

*2233. E. PORTLANDICA L. Mochras, Merioneth, JONES.

2238. E. PEPLIS L. In splendid condition near Torr Cross, S. Devon, the old habitat, FOGGITT, *in litt.*

2243. MERCURIALIS ANNUA L. Harlech, Merioneth; Beaumaris, Anglesey, DRUCE & JONES; N. Queensferry, Fife, TEMPLEMAN.

2244. ULMUS HOLLANDICA Mill. Abergavenny, Monmouth; Crickhowell, Brecon, DRUCE.

2245. U. CARPINIFOLIA Borck. (GLABRA Mill.). Swaffham, W. Norfolk; Ramsey, Hunts, DRUCE.

2245 (2). U. PLOTII Druce. Near Swaffham, W. Norfolk; Crickhowell, Brecon; near Lichfield, Staffs, DRUCE.

†2246. U. STRICTA Lindl. Crickhowell, Brecon, DRUCE.

†2248. CANNABIS SATIVA L. Beaumaris, Anglesey, DRUCE; Belfast, Clontarf and Dublin, GRIERSON.

2255. BETULA ALBA L. Near Tenby, Pembroke; Crickhowell, Brecon, DRUCE.

2256. B. PUBESCENS Ehrh. Narberth, Pembroke, DRUCE.

2258. ALNUS GLUTINOSA Gaertn., var. MACROCARPA Loudon. Near Fishbourne, LITTLE, vide sp.; Perryfield, Petworth, W. Sussex, BARTON.

2262. QUERCUS SESSILIFLORA Salisb. Cardigan, DRUCE; Chidingfield Green, Surrey, BISHOP; the last perhaps × ROBUR.

2269. SALIX VIRIDIS Fries. Between Crofton and E. Grafton, S Wilts, HURST; Towyn, Merioneth, LEY.

*2269. S. ALBA L., var. VITELLINA (L.). Llanderfel, Merioneth, RUDDY.

2271. S. PURPUREA L. Moy, Easterness; Wilsford, S. Wilts, DRUCE.

2273. S. VIMINALIS L., var. LINEARIFOLIA W. & G. Wilsford, S. Wilts; Kidlington, Oxon, DRUCE; Caversham, Oxon, MURRAY.

2274. S. SMITHIANA Willd. Furze Hill, N. Wilts, HURST; Beauly, Easterness, DRUCE.

2276. S. AURITA L. With hermaphrodite flowers, Aldbourne, Wilts, TODD.

2278. S. REPENS L., var. ARGENTEA (Sm.). Near Carnarvon; Tenby, Pembroke, DRUCE.

†2289. POPULUS CANESCENS Sm. Tenby, Pembroke, DRUCE.

†2291. P. NIGRA L. Large tree, Swainsthorpe, W. Norfolk; Crickhowell, Brecon; near Harford, Staffs, DRUCE.

†2293. P. DELTOIDEA Marsh. Haverford West, Pembroke, DRUCE.

†2294. P. TACAMAHACCA Mill. Crickhowell, Brecon; Llandilo, Carmarthen, DRUCE.

*2299. HYDROCHARIS MORSUS-RANAE L. Ouaine, Jersey, ATTENBOROUGH.

2304. NEOTTIA NIDUS-AVIS Rich. Lochorne Burn, Blairadam, Fife, TEMPLEMAN; Maentwrog Valley, Merioneth, JONES.

2306. LISTERA CORDATA Br. Below W. Linton, Peebles, TEMPLEMAN.

*2312. CEPHALANTHERA RUBRA Rich. Near Wye, Kent, vouched for by T. ATTENBOROUGH. Confirmation is desirable.

*2315. HELLEBORINE PALUSTRIS Schrank. Pale, Merioneth, RUDDY; Harlech, Merioneth, JONES.

2316. H. VIRIDIFLORA Tr. & Wheld. Hambledon, Bucks, DRUCE.

2316. H. LATIFOLIA Druce, agg. Murrdean, Fordell, Fife, TEMPLEMAN; Llanderfel, etc., Merioneth, JONES. Var. ATROVIRIDIS (Linton) Druce. Lyndcombe Hill, N. Somerset, ROPER.

*2324. ORCHIS MORIO L. Harlech, etc., Merioneth, rather rare, JONES.

2329. O. MASCULA L. A lusus, with narrow division of perianth, Tenby, Pembroke, ARNETT.

2330. O. PYRAMIDALIS L. Sea sand, Quenvais, Jersey, ATTENBOROUGH; Tenby, Pembroke, ARNETT.

*2330. O. PYRAMIDALIS L. Harlech, near Barmouth, Merioneth, JONES.

2331. O. HIRCINA Crantz. Still at St. Ouen's, Jersey, ATTENBOROUGH; also seen in 1920!

*2334. OPHRYS SPHEGODES Mill. Quenvais, Jersey, ATTENBOROUGH!

2335 (2). O. TROLLII Heg. Nettlebed, STANSFIELD; Nuffield, Oxon, T. GREEN.

2338. HABENARIA GYMNADENIA Druce. Clova, Forfar; Strathpeffer, E. Ross; Cnochan, W. Ross; Inchnadamph, E. Sutherland, slightly smaller flower than those of the Rudley Marsh, S. Hants, specimens, but having the same slender spur, DRUCE. Var. DENSIFLORA (Wahl.). Shapwick Moor, N. Somerset, ROPER.

*2339. H. ALBIDA Br. Near Chandler's Ford, S. Hants, Major ROBERTSON.

2340. H. VIRIDIS Br. and var. BRACTEATA A. Gray. Shapwick Moor, N. Somerset, ROPER.

2349. IRIS BASTARDI Bor. Parkmill, Barland, Glamorgan, WEBB.

*2350. I. FOETIDISSIMA L. Barmouth, Merioneth, RUDDY.

2359. ROMULEA COLUMNAE S. & M. Salcombe, Devon, ATTENBOROUGH. Despite the golfers this is still quite plentiful in its old habitat.

†2363. TRITONIA CROCOSMIFOLIA Nichols. Beaumaris, Anglesey, DRUCE.

*2364. NARCISUS PSEUDO-NARCISSUS L. Dolgelly, etc., Merioneth, JONES.

†2382. RUSCUS ACULEATUS L. At Dirleton Castle, Haddington, planted, TEMPLEMAN.

*2385. POLYGONATUM MULTIFLORUM All. Between Machynlleth and Corris, Merioneth, JONES.

2396. ALLIUM VINEALE L., var. COMPACTUM (Thuill.). Traprain Law, Haddington; Aberdour, Fife. Var. BULBIFERUM Syme. Near St David's, Fife, TEMPLEMAN.

†2400 (2). A. NEAPOLITANUM Cyr. Hortal. Near Torquay, S. Devon, WATERFALL.

†*2401. A. TRIQUETRUM L. Cliffs, Sandown, Isle of Wight, Miss NEILL, vide sp.

2404. A. SIBIRICUM L. Collected at Mullion; cultivated at Cardiff, it has lost all its distinguishing characters and is indistinguishable from *Schoenoprasum*, PAUL W. RICHARDS. This note from our youngest member is worth testing.

†2407. MUSCARI RACEMOSUM Lam. & DC. Near N. Queensferry, Fife; naturalised by the Dour, Aberdour, Fife, TEMPLEMAN.

2413. ORNITHOGALUM UMBELLATUM L. Besilsleigh, Berks, in the greatest profusion. The dry summer of 1919 induced a most magnificent flowering, large patches of its white blossoms covering a large extent of pasture, DRUCE; in a field near the Cherwell, near Oxford, HAYNES; plentiful in woods and warrens between Elvedon and Ickingham, W. Suffolk; Gogmagog, Cambridge, EVANS.

†*2415. LILIUM PYRENAICUM Gouan. Many plants on a grassy bank north of Tongue, W. Sutherland, of garden origin, DRUCE.

†2416. L. MARTAGON L. Hortal. Abundant at Baldon, Oxon, DRUCE.

2418. FRITILLARIA MELEAGRIS L. Near Wolseley Bridge, Staffs, all specimens pure white, with no sign of chequering, H. P. READER, *in litt.*

2420. GAGEA LUTEA Ker-Gawl. Near Birdlip, E. Gloster, Miss BUTLER; Forret Den, Logie, Fife, TEMPLEMAN, ? extinct in *Top. Bot.*

2422. COLCHICUM AUTUMNALE L., f. ALBUM. North Cadbury, N. Somerset, BOYS.

*2423. NARTHECIUM OSSIFRAGUM Huds. Near Macbie Hill, Peebles, TEMPLEMAN.

2431. JUNCUS BALTICUS Willd. Dornoch, E. Sutherland, dwarfed to a few inches high with the drought in July, DRUCE.

2435. J. ARTICULATUS L. Galled with *Livia juncorum*. Wyre Forest, Worcester, Sir R. CURTIS. Var. NIGRITELLUS Don. Black Loch, Cleish, Fife, TEMPLEMAN.

2439. J. COMPRESSUS Jacq. Bank of Kennet, Ramsbury, Wilts, HURST.

2442. J. BUFONIUS L., var. FASCICULATUS Koch. Pwlheli, Carnarvon; Moy, Easterness, DRUCE; Laleham, Middlesex, BRITTON.

†*2451. JUNCOIDES NIVEUM (L.) Druce. Moy, Easterness, DRUCE; still at Broomhall, Fife, TEMPLEMAN.

2454. J. MULTIFLORUM Druce. Watton, W. Norfolk, DRUCE. Var. UMBELLATUM Druce. Foxbury Wood, Wilts, HURST.

2455. J. PALLESCENS (Besser) Druce. *Pinus* Wood, Balmuto, Fife, probably planted; woods of Aghada, Killarney, RIDLEY in *Hb. Brit. Mus.*, teste A. B. Jackson. See *Rep. B.E.C.* 312, 1907. If correctly named Syme may have introduced it at Balmuto, as the place is full of plants he tried to naturalise. In the *Flora of Kerry* Scully put it as a variety of *erecta*, that is *pallescens* Hoppe, not of Besser. As Killarney is a long way out of its range, it is desirable to know which plant occurs.

†2459. PHOENIX DACTYLIFERA L. Pwlheli, Carnarvon, DRUCE; Belfast, GRIERSON. These seedling dates in most cases come from fruit condemned by the local Health Authorities. Carted away with street sweepings, the heat afforded by the fermentation induces germination. Of course, they are not permanent. The young plants have been mistaken for *Tritonia*.

2464. SPARGANIUM NEGLECTUM Beeby. Drumtuthie, Fife, TEMPLEMAN.

2465. S. NATANS L. (AFFINE). Near Ardgay, E. Ross, Mrs DRUMMOND; loch above Tongue, W. Sutherland, DRUCE; Craigluscar, Fife, TEMPLEMAN. *S. natans* L. is a nomen confusum.

2466. S. MINIMUM Fr. Craigluscar Hill, Fife, TEMPLEMAN.

2477. ECHINODORUS RANUNCULOIDES Eng. Crymyln Canal, Glamorgan, WEBB; Loch Leven, Kinross, TEMPLEMAN.

2480. DAMASONIUM ALISMA Mill. Brown's Green, Shinfield, Berks, Prof. D. MACLEAN & PERCIVAL, a most welcome reappearance in the county, the last certain record being nearly 80 years ago.

*2493. POTAMOGETON GRAMINEUS L. Bala, Merioneth, RUDDY.

*2515. RUPPIA SPIRALIS Dum. Barmouth, Merioneth. JONES.

*2518. ZANNICHELLIA GIBBEROSA Reichb. Swainsthorpe, Norfolk, 1919, DRUCE & WEDGWOOD.

2520. ZOSTERA MARINA × NANA. Distributed from Montrose Basin, Forfar, by R. & M. CORSTORPHINE as *Z. marina*, var. *steno-*

phylla. See *Rep. B.E.C.* 377, 1915. W. H. Pearsall sent a specimen to Dr J. O. Hagström who writes :—" I have worked much on this *Zostera* from Montrose Basin because it seems to be the hybrid *marinus* × *nana*. This was found near Kirkwall (Orkney) in 1886, by W. R. Linton, and in Northumberland in 1887, by H. E. Fox. Very beautiful examples. The Montrose plant has the sheaths connate (= *marinus*) but the ovary is even (*Z. nana*) and pollen infertile. No retiuncles are observed but the nervation reminds one of *Z. nana*. This hybrid may perhaps be not so rare along the Scotland coast if anybody took pains to look for it."

†2525. APONOGETON DISTACHYUM Thumb. Caldy Isle, Pembroke, ARNETT.

2529. ELEOCHARIS PALUSTRIS Br., var. MAJOR Sonder. In a deep pond at Tidcombe, S. Wilts, alt. 650 feet, plants 36 inches high, HURST.

2532. SCIRPUS SYLVATICUS L. Radnor, WATERFALL.

2560. CAREX ACUTIFORMIS Ehrh. Aberdour, Fife, TEMPLEMAN; Llandorfel, Merioneth, RUDDY.

2561. C. VESICARIA L. Brahan, E. Ross, DRUCE.

*2567. C. PENDULA Huds. Pembroke, DRUCE & ARNETT; near Llanfaer, Merioneth, JONES.

2570. C. HELODES Link. Newbridge, Radnor, TODD; *Earlston, Roxburgh, BAILEY.

2571. C. CAPILLARIS L. Very large specimens by the river near Inchnadamph, W. Sutherland, DRUCE.

2573. C. DISTANS L. Blackness, Linlithgow, TEMPLEMAN.

*2574. C. PUNCTATA Gaud. Near Barmouth Junction, in damp interstices of rocks, JONES; also subsequently at Minffordd Marshes Merioneth, COBBE, vide sp. A welcome county addition.

2575. C. FULVA × FLAVA. Above Tan-y-Bwlch, Merioneth, COBBE.

2576. C. FLAVA L., var. OEDOCARPA And. Killarney, Kerry, Sir R. CURTIS. × OEDERI ? Gullane, Haddington, TEMPLEMAN.

2576. C. LEPIDOCARPA Tausch. Pentlands, above Dolphinton, Peebles, TEMPLEMAN.

2577. C. OEDERI Retz. Harlech, Merioneth, DRUCE. A form approaching var. ELATIOR Schlecht., Shouldham, W. Norfolk, LITTLE.

2591. C. PANICEA L., var. TUMIDULA (Laest.). Stoke Ferry, W. Norfolk, LITTLE; Rudley, S. Hants; Scarmclett, Caithness, DRUCE.

2592. C. MAGELLANICA Lam. Lurg and Dow Lochs, Fife, TEMPLEMAN, teste A. BENNETT.

2593. C. LIMOSA L. Lurg and Dow Lochs, etc., alt. c. 900 feet, Cleish Hills, Fife, TEMPLEMAN; Alltnaharra, W. Sutherland, and there too as a form approaching *magellanica* in the more acute glumes and robust habit. It is worth further study.

2599. C. SALINA Wahl., var. KATTEGATENSIS. Still in small quantity in the Beauly Marsh, where it was originally seen by me in its second Scottish station, DRUCE.

2600. C. ELATA All. A small form at Rudley, S. Hants, DRUCE. × GOODENOWII Gay. Stow Bedon, W. Norfolk, 1918, DRUCE.

2602. C. AQUATILIS Wahl. Bletham Beck, Windermere, PEARSALL; Town Loch, Dunfermline, Fife, TEMPLEMAN.

2604. C. GOODENOWII Gay, var. JUNCELLA Asch. Glen Phee, Forfar; Moy, Easterness; Scarmclett, Caithness; Llanberris, Carnarvon; Bodeilio, Anglesey; Scoulton, Stow Bedon, W. Norfolk, DRUCE. Var. CHLOROSTACHYA Asch. Arthog, Merioneth, COBBE; Scarmclett, Caithness; Golspie, E. Sutherland, DRUCE.

2608. C. LEPORINA L., var ARGYROLOCHIN Koch. Moy, Easterness, WEDGWOOD & DRUCE.

*2611. C. REMOTA L. Donibristle, Fife, TEMPLEMAN.

2612. C. CANESCENS L. *Macbie Hill, Peebles, TEMPLEMAN; Strathpeffer, E. Ross, DRUCE.

*2615. C. PAIRAEI F. Schultz. Rowney Warren, Beds, LITTLE; Elvedon, W. Suffolk, BROWN.

*2616. C. DIVULSA Stokes. Newport, Pembroke, DRUCE; Llanderfel, Merioneth, RUDDY.

2617. C. PANICULATA L. Bonar Bridge, E. Ross, DRUCE.

2619. C. DIANDRA Schrank. Otterston Loch, Black Loch, Fife, TEMPLEMAN; Llandrindod, Radnor, TODD. Var. TENELLA. Shapwick Peat Moor, N. Somerset, MARSHALL, *in litt.*

2624. C. CHORDORRHIZA L. Plentiful and in good fruit in the locality where Marshall found it at Alltnaharra, W. Sutherland, DRUCE.

2625. C. INCURVA Lightf. Dornoch, E. Sutherland, Mrs WRIGHT & DRUCE. Var. ERECTA Lange. Tentsmuir, Fife, TEMPLEMAN.

*2629. C. DIOICA L. Pentlands, above Dolphinton, Peebles, TEMPLEMAN.

†2632. PANICUM CRUS-GALLI L., var. HOSTII. Bathpool, N. Somerset, MARSHALL. Ref. No. 230 is the type only, teste THELLUNG. Var. BREVISETUM Doell. Chester, COBBE.

†2637 (2). P. LAEVIFOLIUM Hack., var. AMBOENSE Hack. Meanwood, York, HORRELL.

2643. SPARTINA TOWNSENDII Groves. Three specimens have established themselves at Pagham Harbour, Prof. F. W. OLIVER, *in* *litt.* See also *Wats. B.E.C.* 79, 1918. A recent immigrant, I did not observe it in 1917.

†2653. PHALARIS MINOR Retz. and †2654. P. PARADOXA L. Llanberris, Carnarvon, COBBE & DRUCE.

2655. P. ARUNDINACEA L., var. PICTA L. In a marsh near Bonar Bridge, E. Ross, DRUCE.

2665. ALOPECURUS BULBOSUS Gouan. New to Hayling Island, S. Hants, DRUCE.

†2680. PHLEUM PANICULATUM Huds. Eriswell, W. Suffolk, 1848, TYACKE.

†2681. P. SUBULATUM A. & G. St Philip's, Bristol, COBBE.

2684. AGROSTIS ALBA L., var. COARCTATA Hoffm. Dornoch, E. Sutherland, DRUCE.

2687. A. CANINA L., var. STOLONIFERA Blytt. Wellington College, Berks, 1894, DRUCE.

†2690. POLYPOGON MONSPELIENSE Desf. Llanberris, Carnarvon, COBBE.

2693. CALAMAGROSTIS EPIGEIOS Roth. Near Pevensey, E. Sussex, HARRISON; Abersoch, Carnarvon, COBBE.

2698. GASTRIDIUM VENTRICOSUM Sch. & Th. Knap Cliff, Glamorgan, WEBB.

†2699. APERA SPICA-VENTI Beauv. On a thatched roof, in great plenty, at Killin, M. Perth, FRASER.

2710. DESCHAMPSIA ALPINA R. & S. The viviparous form from Lochnagar remains unchanged in my garden, DRUCE.

2717. AVENA FATUA L., var. INTERMEDIA and between INTERMEDIA and HYBRIDA (Peterm). St Philip's, Bristol, DRUCE.

2733. PHRAGMITES VULGARIS (Lam.) Druce. * var. FLAVESCENS (Cust.). Downham, W. Norfolk; Buckenham, E. Norfolk; Wisbeach, Cambridge; Whittlesey, Hunts; Peterborough, Northants, DRUCE; E. Mersea, N. Essex, BROWN. Var. VULNERANS (Asch.). Coniston Lake side, Lancs, PEARSALL; Wood Perry, Oxon, DRUCE.

*2735. ARRHENATHERUM TUBEROSUM (Gilib.) Druce. La Haule, Jersey, DRUCE.

†2737. CYNOSURUS ECHINATUS L. Salisbury, Wilts, GODDARD; Tower o' the Moor, N. Lincs, ALSTON; Glen More, Easterness, 100 feet, DRUCE.

2738. C. CRISTATUS L., f. CUPREA. Dornoch, E. Sutherland; Inchnadamph, W. Sutherland; Berriedale, Caithness, DRUCE.

2739. KOELERIA GRACILIS Pers. (chiefly as var. BRITANNICA). Beauly, Aviemore, Easterness; St Andrews, Fife; Bettyhill, W. Sutherland; * Cnochan, W. Ross; Dornoch, E. Sutherland; Berriedale, Caithness, DRUCE. Var. BRITANNICA (Domin). Pyle, Glamorgan, WEBB; Burntisland, Fife, TEMPLEMAN.

2742. K. ALBESCENS DC., var. GLABRA DC. Craig Buckley, Fife, TEMPLEMAN; * Cove, Kincardine, DRUCE.

2752. DESMAZERIA LOLIACEA Nym. Gimlet Rock, Carnarvon, COBBE.

†2758. POA CHAIXII Vill. Moy, Easterness, established in the beautiful grounds of The Mackintosh, DRUCE; N. Queensferry, Fife, TEMPLEMAN.

2759. P. IRRIGATA Lindm. *Cairngorm, Easterness; Dornoch, E. Sutherland; Caenlochan, Forfar; *Cnochan, W. Sutherland, DRUCE.

2759. P. NEMORALIS L. Weekley Hall Woods, Northants, CHESTER, not var. *uniflora*. See *Rep. B.E.C.* 595, 1916; Lomond Hill, Fife, TEMPLEMAN.

2769. P. ANNUA L. On the summit of Snowdon, Carnarvon. DRUCE, and as a perennial form. Var. EXILIS. St Ouen's Bay, Jersey; Petit Bo, Guernsey, DRUCE.

*2773. GLYCERIA PLICATA Fr. Near Newport, Pembroke, DRUCE.

2776. G. MARITIMA Wahl. Newport, Pembroke; Harlech, Merioneth; Dornoch, E. Sutherland, DRUCE. Var. HIBERNICA Druce. Egloshayle, E. Cornwall, THURSTON.

*2782. FESTUCA ELATIOR L. Harlech, etc., Merioneth, JONES.

*2784. F. HETEROPHYLLA Lam. Moy grounds, Easterness; Brahan Castle, E. Ross, in each case introduced probably with Rhododendrons, DRUCE.

2785. F. RUBRA L. On the summit of Snowdon, Carnarvon; Craig Cille, Brecon. Var. PRUINOSA (Hack.). Newport, Pembroke, DRUCE.

2787. F. OVINA L., var. VIVIPARA. On Carnedd Llewellyn, where Johnson observed it in 1641. He called it Grass upon grass.

2788. F. MEMBRANACEA Druce. Plentiful and in beautiful condition at Tenby, Pembroke (lacks pers. auth. in *Top. Bot.*), DRUCE.

2790. F. DANTHONII A. & G., var. AMBIGUA (Le Gall). Hayling Island, S. Hants, DRUCE.

*2800. BROMUS RAMOSUS Huds. Llanderfel, Merioneth, RUDDY.

*2801. B. ERECTUS Huds. Tenby, Pembroke, DRUCE.

†2802. B. INERMIS Leysser. Hardwick Park, Oxon, MURRAY.

†2803. B. UNIOLOIDES H.B.K. Didcot, Berks, PARRY.

*2807. B. COMMUTATUS Schrad. Llanderfel, Merioneth, RUDDY.

†2809. B. ARVENSIS L., var. VELUTINUS Duv. Jouve. Cardiff, Glamorgan, 1902, DRUCE.

2811. B. HORDEACEUS L., var. NANUS (Weig.). Coast Burrows, Glamorgan, WEBB.

2812. B. INTERRUPTUS Druce. Salisbury, Wilts, GODDARD.

†2816. B. SQUARROSUS L. Near Montrose, Forfar, c. 1800. DON, as *tectorum*, in *Hb. Palmer*.

†2823. LOLIUM BOUCHEANUM Kunth, var. RAMOSUM. Goring, Oxon, PARRY.

2827. AGROPYRON JUNCEUM Beauv. Tenby, Pembroke: Bettyhill, W. Sutherland; * Dornoch, E. Sutherland, DRUCE.

2828. A. PUNGENS R. & S., var. LITORALE (Reichb.). A probable hybrid of this with A. REPENS was sent by Mr B. Reynolds. The plant was five feet high and grew out of the stones of the embankment about two miles above Gravesend, Kent. It had a geniculate habit and the spike was abnormal, but there was not the slightest evidence of *Elymus* as a parent. DRUCE.

†2836. TRITICUM OVATUM Rasp. St Philip's, Bristol, with 2842. T. CYLINDRICUM C. P. & G., and 2842 (2). T. VENTRICOSUM Rasp., COBBE & DRUCE.

*2845. LEPTURUS FILIFORMIS Trin. Arthog, Merioneth, JONES.

†2846. L. INCURVUS (L.) Druce. Cornfields, Freshwater, Isle of Wight, STRATTON.

†2851. HORDEUM JUBATUM L. Railway, Delamere, Cheshire, COBBE.

2861. JUNIPERUS NANA Willd. Cabrach, N. Aberdeen, DRUCE.

2866. EQUISETUM MAXIMUM Lam., var. SEROTINUM (Braun) Milde. Andwell and Old Basing, N. Hants, July 3, 1919, D. H. SCOTT; The Moors, Alphamstone, N. Essex, BROWN. These specimens had nearly 160 secondary cones the 5 lowest nodes bearing barren branches only, the next 7 nodes mostly long branches terminated by small cones followed by several whorls of short, simple branches with cones, the uppermost 4 nodes of complete whorls of sessile cones.

*2871. E. PALUSTRE L., var. POLYSTACHYUM. Llanderfel, Merioneth, RUDDY.

2872. E. HYEMALE L. Swaythling, S. Hants, Canon VAUGHAN; Boat of Garten, Easterness, where it has now extended its area since I saw it there in the eighties, DRUCE; Relty Mill, Durham City, EVANS.

2887. ASPLENIUM GERMANICUM Weiss. Near Dolgelly, Merioneth, pointed out by D. A. JONES.

*2892. POLYSTICHUM SETIFERUM Woyn. (ANGULARE). Harlech, etc., Merioneth, JONES.

2893. P. ACULEATUM Roth. A pretty, bifurcate form, Fordill and Inverkeithing, Fife, TEMPLEMAN. Var. LONCHITIOIDES. Talybont, Brecon, RICHARDS.

*2894. P. LONCHITIS Roth. Near Barmouth, Merioneth. JONES.

2896. DRYOPTERIS FILIX-MAS Schott. A beautiful form, with a ramose frond, from near Ludlow, Salop, WEDGWOOD, is referred to this species by Stansfield who does not consider it to be a hybrid. The facies suggested the presence of *aristata*. Var. PALEACEA DRUCE. Llanbedr, etc., Merioneth, JONES.

2900. D. AEMULA Kuntze. Recess, Galway, TRETHEWY. This had the hay-like scent, vide sp.

2906. CYSTOPTERIS FRAGILIS Bernh. Near Crabbe, Jersey, new to the Island, DRUCE & ATTENBOROUGH.

2908. PHEGOPTERIS POLYPODIOIDES Fée. N. side of Traprain Law, Haddington, TEMPLEMAN.

2915. TRICHOMANES RADICANS Sw. Shown to me near Harlech, Merioneth, by D. A. JONES.

*2919. BOTRYCHIUM LUNARIA Sw. Dolphinton, Peebles, TEMPLEMAN.

*2920. OPHIOGLOSSUM VULGATUM L. Morfa, etc., Merioneth, JONES; Summer Islands, W. Ross, Miss V. BUXTON. I have not seen the latter specimen. It may be the var. *polyphyllum*.

2922. PILULARIA GLOBULIFERA L. Culross Moor, Fife, TEMPLEMAN.

*2926. ISOETES HYSTRIX Dur. Near the Lizard, Cornwall, ROBINSON, vide sp. New to the Mainland and a very important discovery. It grew in a dry, exposed situation, but only a solitary corm was found. I suspected it might be *I. Duriaei* Bory but a microscopic examination shows that it is undoubtedly the same as the Guernsey one which there inhabits a moist peaty loam. Surely it will be found in Cork or Kerry. It occurs in Portugal and Spain as well as in S. W. France. Mr Robinson is much to be congratulated upon his important discovery.

*2931. LYCOPODIUM SELAGO L. Swallow Craig, Black Devon, Fife, TEMPLEMAN.

*2932. SELAGINELLA SELAGINOIDES Link. Pentlands, above Dolphinton, Peebles, TEMPLEMAN.

*2933 *a*. NITELLA SPANIOCLEMA Groves and Bullock-Webster. Lough Kindrum, Fanad Peninsula, W. Donegal, 1919, BULLOCK-WEBSTER. Lough Kindrum lies some 2 miles west of Lough Shannagh, the only lough in which, hitherto, this new *Nitella* has been found.

*2940. N. BATRACHOSPERMA Braun. Lough Keel, Achill Island, W. Mayo, 1919, BULLOCK-WEBSTER, *in litt.* An interesting extension in the distribution of this rare *Nitella* which so far has only been recorded from the Outer Hebrides, W. Donegal and S. Kerry.

*2950. N. TRANSLUCENS Ag. Glastonbury peat moor, N. Somerset, C. SANDWITH.

*2951 *e*. CHARA RUDIS Braun. In an inlet on the south side of Lower Lough Erne, Fermanagh, 1919, BULLOCK-WEBSTER.

*2958. C. DELICATULA Braun, var. BARBATA Groves. Strathpeffer, E. Ross, DRUCE.

GLECHOMA HEDERACEA L., AND ITS SUB-DIVISIONS.

BY W. B. TURRILL, B.Sc.

The name *Glechoma* was used by Linnaeus in his *Systema Naturae*, 1735, and the genus it represented was placed by him in the class *Didynamia*. In the *Genera Plantarum*, ed. 1, 1737, the spelling *Glechoma* is again adopted, but in ed. 5, 1754, p. 251, genus No. 634, the name is spelt *Glecoma*, although the index gives *Glechoma*. The same two modes of spelling occur in the *Species Plantarum*, ed. 1, 1753. p. 578 and index. The word comes from the Greek γλχηὼν —the herb pennyroyal—and the more correct translation is *Glechoma* which is adopted in this paper.

In the *Species Plantarum*, ed. 1, 1753, p. 578, three species are given under the genus *Glecoma* (*Glechoma*), namely *G. hederacea*, *G. arvensis*, and *G. belgica*. In the *Systema Naturae*, 1735, *Calamintha* Tourn., and *Chamaeclema* Boerh., are quoted as synonyms. The former includes *Glechoma hederacea* as we now understand it (*Calamintha humilior fol. rot.*) and the latter is founded on it alone. In the *Genera Plantarum* Rivinius is quoted in addition to Tournefort and his excellent figures of *Hedera terrestris* leave no doubt that this too is *Glechoma hederacea*. It seems clear, therefore, that the species *Glechoma hederacea* must be taken as the plant on which Linnaeus intended to base his genus *Glechoma*. *Glechoma arvensis* L. and *G. belgica* L. are both *Stachys arvensis* L.

Otto Kuntze in his *Revisio Generum Plantarum* takes the *Systema Naturae*, ed. 1, 1735, for the starting point of genera and like Bentham he unites *Glechoma* and *Nepeta*, but for all the species retains the former name (*l.c.* Pars ii., pp. 517-519). The Vienna

Rules, however, make the *Species Plantarum*, ed. 1, 1753, and the *Genera Plantarum*, ed. 5, 1754, the starting points for botanical nomenclature, and since in these two works the genera *Glechoma* and *Nepeta* are kept distinct and *Nepeta* stands first, Kuntze's change is not necessary even if the two genera are considered as one.

In common with most authors the writer separates *Glechoma* from *Nepeta* on the characters shown by the inflorescence and anthers. In *Glechoma* the flowers are borne in the axils of ordinary foliage leaves and the four lobes of each pair of anthers are arranged in the shape of a cross. The relatively dwarf stoloniferous habit usually enables one to distinguish at a glance a species of *Glechoma* from a species of *Nepeta*.

In addition to *Glechoma hederacea* as understood in this paper the following species are to be included in the same genus:—*Glechoma nivalis* Jacqm., *G. thibetica* Jacqm., *G. longibracteata* Briq., *G. decolorans* (Hemsl.) Turrill, comb. nov., *G. pharica* (Prain) Turrill, comb. nov., *G. complanata* (Dunn) Turrill, comb. nov. and possibly *G. rotundifolia* Briq.

Several of the pre-Linnean authors recognised that the Common Ground Ivy occurred in more than one form. Thus Caspar Bauhin in his *Pinax*, p. 306, 1623, has the two forms of *Hedera terrestris*—*major* and *minor*. He is followed by Rivinius, *Flore Irregulari Monopetalo*, p. 13, 1690, who has excellent figures of the two forms but states that they are not specifically distinct. Vaillant, *Botanicon Parisiense*, p. 33, t. vi., f. 4, 5, 6, 1727, records and figures three forms as *Chamaeclema, vulgare, majus*, *C. v. minus* and *C. v. medium*. Since Linnaeus a considerable number of names have been applied by different authors to sub-divisions of *Glechoma hederacea* and it has been the purpose of the present writer to trace as many of these as possible and to determine the value of the varieties or forms they are supposed to designate, so far as this can be done by the aid of original descriptions and herbarium material. Circumstances have not yet permitted either thorough work on this genus in the field, though some has been done in different parts of Europe, or cultural experiments, so that the results submitted here must be considered preliminary to more complete research.

GLECHOMA HEDERACEA L. *Sp. Pl.*, ed 1, p. 578, 1753. *Calamintha hederacea* Scop. *Fl. Carinth.* ii., p. 423, 1772. *Chamaeclema* *hederacea* Moench *Meth. Pl. Hort. et Agri. Marb.* p. 393, 1794. *Glechoma borealis* Salisb. *Prod.* p. 81, 1796. *Nepeta hederacea* Trevisan *Prosp. Fl. Eug.* p. 26, 1842. *Nepeta Glechoma* Benth. *Lab. Gen. et Sp.* p. 485, 1834, et in *DC. Prod.* xii., p. 391, 1848.

Var. GENUINA Gren. et Godr. *Fl. de France*, ii., p. 678, 1850. Var. *typica* Rouy et Foucaud *Fl. de France*, xi., p. 270, 1909. Var. *vulgare* Hermann *Fl. v. Deutschl. u. Fennoskandinav.* p. 392, 1912. This is the common variety in the west of Europe and the only one at present known to occur in the British Isles. It is characterised by the triangular calyx-teeth which pass more or less suddenly into an acuminate apical portion. A large number of forms are known. Some of these probably have the value of Mendelian segregates while others have been produced by habitat conditions.

Forma GLABRATA Beck *Fl. von Nieder-Œsterreich* ii., p. 1003, 1893 (sub *Nepeta Glechoma*, var. *typica*); forma *borealis* Beg. in Fiori e Paoletti *Fl. Anal. d'Ital.* iii., p. 26, 1903. This is a form which is nearly or quite glabrous.

Forma PUBESCENS Ces. ex Beg. in Fiori e Paoletti *Fl. Anal. d'Ital.* iii., p. 26, 1903, is a more or less pubescent or even hirsute form of a rather obscure green colour. Many of the plants named var. *hirsuta* Benth., probably belong here. *G. hederacea*, subvar. *hirsuta* Coss. et Germ. *Fl. de Paris* p. 400, 1861, non *G. hirsuta* W.K., and *G. hederacea*, var. *villosa* A. Boreau *Fl. du Centre de la France* p. 533, 1857, non Koch, are probably synonymous with forma *pubescens* Ces.

Forma BREVIPETIOLATUM Petermann *Flora Lipsiensis Excursoria* p. 437, 1838; O. Kuntze *Fl. von Leipzig* p. 108, 1867. This is a form characterised by having very short petioles.

Forma ACUTILOBA Neuman ex Celakovsky *Prod. Fl. v. Bohm.* ii., p. 354, 1871, is a form with acute teeth to the leaves.

Forma LOBULATUM Kit. (pro sp.), in *Linnaea* xxxii., p. 434, 1863 (in a paper entitled *Additamenta ad Floram Hungaricam*), is said to have glabrous stems and leaves with the latter coarsely incised-crenate or lobulate.

Forma RENIFORMIS Schur *Enumer. Plant. Transsilvan.* p. 533, 1866, has all the leaves glabrous and exactly reniform in shape.

Forma PARVIFOLIA Turrill, forma nova, a planta typica foliis

8-9 mm. longis vix. 1 cm. latis differt. England. Newbury: near the London Road, fl. April 1893, A. BRUCE JACKSON.

Forma MICROCALYX O. Ktze. *Fl. von Leipzig* p. 108, 1867, is a form with the calyx ¼ as long as the corolla.

Forma ROSEA Neuman *Bot. Not.* 1896, p. 282, et *Sveriges Flora* p. 168, 1901, has the corolla rose-red with the exception of the lip and throat which are dull lilac in colour inside.

Forma MICRANTHA Moric. (pro. var.) *Fl. Ven.* i., p. 433, 1820; Rouy et Foucaud *Fl. de France* xi., p. 270, 1909. *Glechoma micrantha* Boeng., ex Reichb. *Fl. Germ. Excurs.* p. 316, 1830-1832. *G. hederacea*, var. *parviflora* Sonder *Fl. Hamburgensis* p. 318, 1851; Beg. in Fiori e Paoletti *Fl. Anal. d'Ital.* vol. iii., p. 26, 1903. *Glechoma hederacea*, forma *parviflora* Neuman *Sveriges Flora* p. 168, 1901. *G. hederacea*, sub.-var. *breviflora* Coss. et Germ. *Fl. de Paris* p. 100, 1861. *G. hederacea*, var. *minor* Gilib. *Chloris Grodnensis* p. 28, 1785. *G. repens*, var. *minor* Gilib. *Plant. Lithuaniae* p. 15, 1785 et *Suppl. Syst. Pl. Eur.* (*Exerc. Bot.*) p. 89, 1792. Var. *praecox* Schur *Enumer. Plant. Transsilvan.* p. 532, 1866, and var. *parviflora* Schur. *l.c.*, probably both belong to this form. Bentham's var. *parviflora* is a mixture of forma *micrantha* and var. *heterophylla*. This form is distinguished by its smaller flowers and more or less aborted stamens. The entire plant has usually rather small proportions. The leaves are mostly reniform and about 1.5 cm. in length and 2 cm. in breadth or smaller. The degree of abortion of the stamens varies considerably but in typical examples of the form the writer has never observed seed to be produced in the absence of pollen derived from flowers of hermaphrodite varieties.

Forma MAGNA Mérat (pro. sp.) *Flore des Envir. de Paris* p. 225, 1812; Lejeune *Fl. de Spa* pt. 2, ii., p. 20, 1813. Var. *major* Gaud. *Fl. Helv.* iv., p. 46, 1829; Koch *Syn. Fl. Germ. et Helv.* p. 563, 1837; Beg. in Fiori e Paoletti *Fl. Anal. d'Ital.* iii., p. 27, 1903; Rouy et Foucaud *Fl. de France* xi., p. 271, 1909. Var. *majus* Petermann *Fl. Lipsiensis Excursoria* p. 437, 1838; O. Ktze. *Fl. von Leipzig* p. 108, 1867. Var *grandiflora* Mart. *Fl. Mosq.* p. 101, 1817; Schur *Enumer. Plant. Transsilvan.* p. 533, 1866. Forma *grandiflora* Fr. ex Neuman *Sveriges Flora* p. 168, 1901. *Glechoma repens*, var. *major* Gilib. *Suppl. Sys. Plant. Eur.* (*Exerc. Bot.*) p.

89, 1792, is apparently a form of *G. hederacea* which cannot be identified from the description given. It may be the var. *genuina*, forma *magna* (Mérat). This form is distinguished from allied forms by being generally double in size in all its parts, by having one or two, rarely more, flowers in the axil of each leaf, and by having conspicuously large corollas and well developed stamens whose anthers bear a full amount of pollen.

Var. HETEROPHYLLA Opiz (pro sp.) in *Natur. Tausch.* vii., p. 61, 1824, et ex Reichb. *Fl. Germ. Excurs.* p. 316, 1831; Rouy et Foucaud *Fl. de France* xi., p. 270, 1909. Var. *intermedia* Schrad. ex Benth. *Lab. Gen. et Sp.* p. 485, 1834 et in DC. *Prod.* xii., p. 391, 1848. Var. *villosa* Koch *Syn.* ed. 1, p. 563, 1837; O. Kuntze *Fl. von Leipzig* p. 108, 1867. Var. *pauciflora* Ledeb. *Fl. Rossica* iii., p. 380, 1847-1849. *Nepeta Glechoma*, forma *heterophylla* Beck *Fl. von Nieder-Œsterreich* ii., p. 1003, 1893. This variety is distinguished by the teeth of the calyx being lanceolate-cuspidate, that is, the relatively broader base gradually narrows into a cuspidate apical portion. The variety is intermediate between var. *genuina* and var. *hirsuta*. The two forms named *G. heterophylla*, var. *latidens* Beg. *Fl. Ital. Exsicc.* 645a, and *G. heterophylla* var. *angustidens* Beg. *Fl. Ital. Exsicc.* 645b, link up respectively with var. *genuina*, forma *magna*, and var. *hirsuta*. It has a wide range in Europe and Asia, stretching as far east as Japan, but it has not yet been recorded in Britain so far as the writer is aware.

Var. SARDOA *Beg.* in Fiori e Paoletti *Fl. Anal. d'Ital.* iii., p. 25, 1903. *Glechoma sardoa* Beg. in *Nuov. Giorn. Bot. Ital.* n.s., xix., 1912, p. 578. This variety is limited to Sardinia. The following is a translation of the original description, which is in Italian: Calyx-teeth about 2 mm. broad at the base and rather long, from thence suddenly acuminate. Calyx-tube sprinkled with minute yellow-golden glands, shining. Leaves reniform, dentate, teeth broad and truncate, not very deep, generally larger than in the type. Plant glabrescent, more developed in all its parts.

Var. SERBICA Halacsy et Wettstein in *Verh. Zool.-Bot. Ges. in Wien*, Bd. 38, p. 71, 1888 (pro sp.), differs especially from all other varieties in having its leaves always with a sharply truncate base never cordate or reniform. Its calyx-teeth resemble those of the var.

heterophylla in gradually narrowing to an acuminate apex. Originally found in northern Serbia the plant is said to retain its characteristics under cultivation.

Var. BULGARICA Borb. in *Termész. Fuzét.*, xiv., p. 51, 1893. The only description the writer has seen of this plant is that given in Velen. *Fl. Bulg.*, Suppl. i., p. 233, 1898, where it is said to be separable from the typical plant (presumably var. *genuina*) by the following characters: Folia brevius petiolata, inferiora saepius trigona acuta et acutiuscule dentata, superne saepe mucronata, media et superna longiora ac lata, calyx longior, dentes calycini longius setaceo-acuminati, corolla longius exserta.

Var. HIRSUTA Baumg. *En. Stirp. Transs.* ii., p. 165, 1816. *Glechoma hirsuta* W. K. *Pl. Rar. Hung.* ii., p. 124, t. 119, 1805. *G. rigida* Kerner in *O.B.Z.* 1874, p. 215. *G. hederacea*, var. *rigida* Rochel *Exs.* nr. 93 ex Kerner, *l.c. Nepeta rigida* Beck *Fl. Nieder-Œsterreich* ii., p. 1004, 1893. Since nothing has been found to show that Rochel *Exs.* nr. 93 was accompanied by a diagnosis, as required by the Vienna rule 37 to make his name valid, the name *hirsuta* is retained for this variety. It includes all plants with long, narrow, nearly or quite subulate calyx-teeth. This characteristic calyx is generally accompanied by large leaves, large flowers and often (except in forma *meridionalis*) a more or less dense soft pubescence. It occurs as the common ground ivy in Eastern Europe being typically found in Hungary and Transsylvania. The writer has collected it as far south as Greek Macedonia (see *Kew Bulletin* 1918, p. 318), and it occurs in an extreme condition in Bosnia (*Herb. Kew*). In China it is apparently common. It does not reach Western Europe and no examples of it from France or England have been found in the numerous collections examined for the purposes of this paper. Although usually recorded in British floras as occurring in this country with the type none of the records seem reliable, either var. *genuina*, forma *pubescens* or var. *genuina*, forma *micrantha* appearing to be the plant intended. Thus in *Journ. Bot.* li., 1913, p. 253, Miss Armitage records a plant from the downs above Merrow, Surrey, as *Nepeta Glechoma*, var. *parviflora* Benth., and in the same periodical, p. 306 of the same volume, the Rev. E. S. Marshall changes the name to *Nepeta Glechoma*, var. *hirsuta* Benth. Specimens collected by Miss Armitage and preserved in *Herbs. G. C.*

Druce and *A. Bruce Jackson* show the plant is *Glechoma hederacea*, var. *genuina*, forma *micrantha* (Mérat).

To the variety *hirsuta* Baumg., belong the following forms:

Forma MERIDIONALIS Beg. in Fiori e Paoletti *Fl. Anal. d'Ital.* iii., p. 27, 1903, which has the entire plant including the leaves glabrescent.

Forma SUBULATA Beg. in Fiori e Paoletti *Fl. Anal. d'Ital.* iii., p. 27, 1903. *Glechoma subulata* Moric. *Fl. Ven.* i., p. 432, 1820. A plant with acutely toothed leaves.

Forma LAMIIFOLIA Schur in *Verh. Siebenb. Ver. Naturw.* iv., p. 58, 1853 (pro. sp.). *Glechoma hirsuta*, var. *maxima* Schur. *Enum. Plant. Transsilvan.* p. 533, 1866. This is a plant with large, very hirsute and coarsely crenate leaves, which are 15 lines long, and large, conspicuous, lilac corollas which are six times longer than the calyx.

Forma LONGIDENS Rohlena in *Sitz. K. Böhm Ges. d. Wiss.*, 1904, is distinguished by having extremely long and narrow calyx-teeth. It is known only from the Balkans.

Bentham's *Nepeta Glechoma*, var. *hirsuta* (*Lab. Gen. et Sp.* p. 485, 1834, et in DC. *Prod.* xii., p. 391, 1848) is a mixture of *G. hederacea*, var. *genuina*, forma *magna* and *G. hederacea*, var. *hirsuta*.

SPECIES EXCLUSAE VEL INDETERMINATAE.

Glechoma arvensis L. *Sp. Pl.* ed. 1, p. 578, 1753, is *Stachys arvensis* L.

Glechoma belgica L. *Sp. Pl.* ed. 1, p. 578, 1753, is *Stachys arvensis* L.

Glechoma grandiflora Lam. et A. P. DC. *Syn. Pl.* p. 223, 1811, et DC. *Flore Française* vi., p. 400, 1815, is *Stachys corsica* Pers.

Glechoma Marrubiastrum Vill. *Hist. Pl. Dauph.* ii., p. 371, 1787, is *Stachys arvensis* L.

Glechoma pannonica Borb. The description of this species has not been traced.

Glechoma rotundifolia Rafin. *Atl. Journ.* p. 177. This description has not been seen.

Glechoma urticaefolia Makino in *Bot. Mag. Tokyo*, xxvii., p. 153, 1913, is *Dracocephalum urticaefolium* Miq.

In conclusion, the writer desires to thank Dr G. C. Druce, M.A., F.L.S., and Mr A. Bruce Jackson, A.L.S., for much kind help and the loan of valuable material.

HAGSTROM'S CRITICAL RESEARCHES ON THE POTAMOGETONS.

By William Harrison Pearsall.

The publication of this fine monograph is a matter of considerable interest to all British botanists, and especially to those actively engaged in the systematic study of our submerged aquatics. In the genus *Potamogeton* Dr J. O. Hagström enumerates 138 species and 62 hybrids, and of these he describes, more or less fully, 106 species and 54 hybrids. The most prominent feature of his descriptions is that relating to the anatomical and histological structure of the plants, and while the morphological characters are not neglected everywhere the emphasis is laid upon the evidence afforded by a study of plant sections. Hitherto in this country anatomical characters have received little attention and have been of slight value to the systematist, but on the Continent they have been more seriously studied and in this genus alone the splendid work of Dr C. Raunkiaer (*Pot. Stud.* 1903), and Dr J. O. Hagström has materially assisted the critical study of this difficult group. I am well aware that considerable divergence of opinion still exists as to the value of the conclusions arrived at from the study of these anatomical and histological characters. Wettstein remarked that he found greater anatomical differences in the same species of *Euphrasia* —when under different conditions of environment—than he found between different species; and even in the genus *Potamogeton*, Dr Graebner (*Lebensgesch.* 436, 1906) affirms that nearly all the commoner species can be divided into further species on account of their anatomical structure. On the contrary Hagström considers it proved that "the anatomical stem-diagram is so fixed that it is very little, if at all, influenced by the morphological variations within the same species," and adduces abundant evidence to support his conclusion. His present monograph embodies the results of long and laborious effort and is far in advance of anything previously attempted in the same direction. Its chief merit lies in the fact that it is in no sense a mere compilation—on the contrary it assumes a knowledge of existing literature that few possess—but it gives conclusions arrived at after patient and persistent personal research. Synonymy receives adequate attention, the distinctive morphological characters are tersely enumerated and the anatomical structure of the various species is given in great detail. The figures in the text, though small, are of considerable value, the classification is exhaustive and the world distribution of much interest. Unfortunately, the British records are extremely meagre—as the following inclusive lists will show—but those of Scandinavia and adjacent countries are very numerous. Some few of Dr Hagström's conclusions about British plants will, perhaps, not be readily accepted by British botanists who have so much more knowledge of the living plants, but within the limits of this brief review it is impossible adequately to discuss them. My only present purpose is to stimulate the collection of these interesting plants and to thereby solve some of the problems they present.

P. FILIFORMIS Persoon. (*P. marinus* L., ex Fries). This is divided into 7 narrow-leaved 'forms' and 4 broad-leaved 'varieties.' The former have stem-leaves usually 0.5 to 0.75 mm. broad, and several of them are represented in this country. The only record, however, is f. *major* Tisel., Caithness, 85, (Grant).

P. FILIFORMIS Pers. × PECTINATUS L. This is divided into 4 groups according to the shape of the leaf-apex:—*acutus*, *intermedius*, *cuspidatus* and *obtusus*. Under the last, *obtusus* Hagstr., f. *Kerneri* n. nom. (=*P. juncifolius* Kerner, ap. Fritsch) no British stations are given, although such exist, I believe.

P. VAGINATUS Turcz. Dr Hagström states that the distribution of this species does not extend southward beyond the 60th parallel. He quotes the record from Shetland, 1887, W. H. Beeby (*Journ. Bot.* 1907, 192), and says that he is not fully convinced of its correctness. "If it were true it would be extraordinary that the species has not been found either in Norway, the great lakes of Swedish Lapland, Iceland, or Greenland. Consequently it should have been brought direct from Canada or the Gulf of Bothnia to Shetland!" Personally, I see no insuperable difficulty in this.

P. PECTINATUS L. (*P. interruptus* Kitaibel. *P. flabellatus* Babington). This is divided into 2 varieties, according as the "leaf-apex is endowed with a conspicuous mucro or more slowly tapered." The British records given are:—

Var. *ungulatus* Hagstr. Wallasey, Cheshire, 86 (Lomax).

Var. *ungulatus* Hagstr., f. *subaequabilis* n.f. R. Leen (Mitchell). f. *latiusculus* n.f. Benwick, Cambs, 85 (Fryer).

Var. *diffusus* Hagstr., f. *laxus* Tisel. Hedge Court Mill Pond, Surrey, 83 (Beeby); Chatteris, Cambs., 84 (Fryer). f. *scoparius* Wallr. Warwick, 38 (Babington, labelled *P. flabellatus*.). f. *interruptus* (Kit.) Asch. (=*P. interruptus* Kitaibel=*P. flabellatus* Babington). Hull, Yorkshire, 61, 7th September 1853 (Babington); Stoke Heath, Warwick, 38, 1855 (T. Kirk).

P. CRISPUS L. Fieber classified this into 2 varieties characterised by a pointed or obtuse leaf-apex, var. *acutifolius* and var. *obtusifolius*. The five other varieties cited include var. *cornutus* Linton. No British stations are recorded for any form of this species, although its European distribution is admitted.

× P. COOPERI Fryer. (=*P. crispus* L. × *perfoliatus* L.) This is divided into 2 series of forms—one, *serrulatus*, having leaf-margins with one-celled denticles, like *P. perfoliatus*; the other, *serratus*, having real incisions in the margin, like *P. crispus*. Under the former, is f. *eu-Cooperi* Graebner. "A single station known, England, Leicestershire, Loughborough Canal. This plant might possibly be *P. crispus* × *praelongus*." The latter supposition is untenable, in my judgment. I have examined numbers of plants from this station, and in every case the distinctive denticles are readily seen. In the same series are f. *Jacksonii* (Lees), Chester, R. Dee, 91 (Billups); Parsonware Drove, Benwick, Cambs., 92 (Billups and Fryer); and f. *scoticus* n.f., Scotland, Stirling, Union Canal above Falkirk, 94 (Stirling and Kidston). No British stations are given for *serratus*, which is apparently only recorded from Bavaria.

P. CRISPUS L. × PRAELONGUS Wulf. (=*P. undulatus* Wolfg.). The only British record is Stirlingshire, Scotland (A. Bennett).

P. BENNETTII Fryer. This is shown to be *crispus* × *pusillus* rather than *crispus* × *obtusifolius.* The specimens examined are labelled Stirling, v.-c. 86, Wood Pond, Grangemouth, Aug. 24. 1894 (R. Kidston and Col. Stirling).

P. ZOSTERIFOLIUS Schum. (=*P. compressus* L. ap. Fries.) Dr Hagström gives a large number of Scandinavian stations for this, but only one reference to these islands. In describing a barren form, f. *abortivus*, which has shortened peduncles (15-25 mm.), undeveloped spike and barren floral parts, he suggests that these properties may derive their origin from *P. acutifolius*, and adds "a similar plant is also collected in Scotland by Babington, where *P. acutifolius* is not now met with. Nevertheless it is possible that it has occurred there in olden times."

P. ACUTIFOLIUS Link. The author alludes to the fact that in this genus "nearly allied species often appear in pairs," and gives instances of *P. polygonifolius* and *P. coloratus*; *P. gramineus* and *P. lucens*; *P. zosterifolius* and *P. acutifolius.* He gives an exhaustive and most valuable description of the differences between the species of the last-named pair and illustrates his points by three admirable figures. The British specimens seen are from Middlesex (Linton), and Norfolk (Bennett).

P. TRICHOIDES Cham. et Schlecht. Only two British stations are given for plants examined, Surrey (Beeby), and Norwich (Babington).

The treatment of the *Pusilli* is one of the most interesting in the entire work. The author states that "the stipular sheath behaves differently in this group. In some species we have not the usual. open, convolute ligule, but a connate, closed ocrea," which differs from that of *P. filiformis* by being non-plicate aback. This condition of the ligules has, therefore, a considerable systematic value and accounts for his division of the *pusillus*-group into two series.

Series A.—*Pusilli connati.* Vaginae stipulares connatae ochreatae, non plicatae. Folia acute ± longe cuspidata vel sensim attenuata ut plurimum ± rigida. To this belong the following British forms:—*P. rutilus* Wolfg., *P. mucronatus* Schrad. (*P. Friesii*), *P. panormitanus* Bivona Bernardi, and *P. dualis* Hagstr. (= *panormitanus* × *pusillus*).

Series B.—*Pusilli convoluti.* Vaginae stipulares fissae convolutae. Under this we find *P. obtusifolius* M. & K., *P. Sturrockii* Ar. Benn. (= *obtusifolius* × *panormitanus*). *P. pusillus*, and *P franconicus* Fischer (= *pusillus* × *trichoides*).

P. RUTILUS Wolfgang. No British stations are given.

P. MUCRONATUS Schrader, ap. Reichenbach Icones Fl. Germ. et Helv. vii., 15, 1845. (*P. Friesii* Ruprecht.) Only a general reference, " England, in several stations," is given.

P. PANORMITANUS Bivona Bernardi. This species is treated very fully and the essential differences between it and *P. pusillus* pointed out at some length. " In the first place the very colour is different. *P. panormitanus* having a more light green, often yellowish tint, while *P. pusillus* has a darker colour inclining to brown. The mode of growth is also different, *P. panormitanus* stretches itself upwards elegantly *rutilus*-like, *P. pusillus* again expands like a bush with copious branches in the upper part. *P. panormitanus* stretches the upper internodes of the stem to the necessary length, but never prolongs by branches of several ranks, distichously, which is the characteristic of *P. pusillus* and *obtusifolius.*" *P. panormitanus* has stiffer leaves, with a prominent midrib elevated below, and usually a longer and more acute leaf-apex. The mid-rib never has the large celled lacunæ (characteristic of *P. pusillus*) on either side of it. The most important differences, however, " lie in the stipular sheaths " (already mentioned) " and in the shape and occurrence of the turios." The latter are small and slender (12-15 mm.), and " usually developed at the base of the spike-bearing long branches." " In *P. pusillus* the development is quite the contrary, the best developed buds occurring in the branch-tops. Moreover, they are considerably larger." The British stations recorded are Shropshire (Beckwith), Surrey (Bennett) and (Nicholson).

P. DUALIS Hagstr., n. hybr. (= *P. panormitanus* × *pusillus*). This is stated to be very rare and that probably accounts for its meagre treatment. There are specimens in *Hb. Stockholm* from England, ponds near York, 81 (Bennett), Shropshire, 86 (Beckwith).

P. OBTUSIFOLIUS M. & K. The European distribution of this species receives less attention than usual and the only British specimens noted are from England—Surrey and E. Norfolk ; Scotland—

Thornhill and Balgavies Loch. No reference is made to the fact that this species fruits more freely than any other of the linear-leaved species. Not only so, but it frequently produces both fruit and turios abundantly at the same time, and as a consequence, under congenial conditions, spreads with great rapidity.

P. STURROCKII Ar. Benn. Dr Hagström considers this a hybrid of *P. obtusifolius* and *P. panormitanus*, but the reasons given are few and, in my opinion, quite insufficient. It is clear from the scanty reference to this plant that the author has seen but few specimens of it. Under " distribution," only Scotland, Marlee Loch, Perth (Sturrock), and Loch Schechernich, E. Perth (Marshall), are given, and Dr Hagström states finally, that " other specimens named *Sturrockii* are not identic with this rare plant." I consider our English Lake District plants are quite distinct.

P. PUSILLUS L. *P. Berchtoldi* Fieb., saltem pro parte (maxima parte ?). This species is very fully described and finely illustrated by carefully drawn figures. Further, the comparisons with *P. panormitanus* are of much value ; the leaves of *pusillus* are more soft and flexible, have a more or less rounded apex and one or two rows of lacunae on either side the midrib. " The upper part of the turio presents, by the amassment of leaves and sheaths, a considerably incrassate and fusiform shape, and the sheaths embrace quite the inner obtuse leaves." Under classification are included 3 varieties, *major* M. & K., *tenuissimus* M. & K., and *Berchtoldi* (Fieb.) Asch. et Graebn., each with several forms. Distribution :—England, Anglesea, 86 (Griffith), labelled " sub. sp. *Sturrockii* mihi, comm. Ar. Bennett," is nearly identical with v. *polyphyllus* Mor. ; Westmoreland, 74, Bailey, f. *ligulifolius* Fischer, by Ar. Bennett in *Journ. Bot.* 67, 1881, named " v. *panormitanus*." Ordinary form from other stations—Scotland, Stirling, 92 (Kidston and Stirling), is v. *Berchtoldi* (Fieb.).

Var. BERCHTOLDI (Fieb.) Asch. et Graebn. Dr Hagström considers that at least two separate forms—" by Fieber confounded with each other "—are included under this name. " I think it impossible now to state whether all that Fieber referred to his new species may be the hybrid—*P. pusilliformis* Hagstr. (*P. mucronatus* Sch. × *P. pusillus* L.)—or if not, partly pure *P. pusillus*, partly also the hybrid *P. dualis* Hagstr. (*panormitanus* × *pusillus*). The latter is very likely to be the fact, and when the name *Berchtoldi* is already applied by Ascherson and Graebner to a true *pusillus*-form, we shall have to give new names to the hybrids included in *P. Berchtoldi* of Fieber."

✓ P. FRANCONICUS Fischer. (= *P. pusillus* × *trichoides*). Under var. *spicosus* Hagstr.—with upper part of the stem as in *P. trichoides*—are given the following English stations:—Hedge Court Mill Pond, Surrey, 86 (Beeby); Glastonbury, Somerset, 82 (Rev. Murray).

P. ALPINUS Balbis. The author's "main-form" is the common one with leaves 15-20 mm. broad. All more narrow-leaved forms come under var. *linearifolius* Hagstr., with submerged leaves narrow linear-lanceolate, 100 x 5-8 mm. No British localities are mentioned for *P. alpinus*, nor for the following *P. venustus* Baagoe—see *Rep. B.E.C.* 376, 1916.

P. DRUCEI Fryer is considered to be *P. alpinus* × *natans*. Although this view has been often advanced, many botanists will accept it only with mental reservations. The texture of the leaves, their long petioles with absence of the *natans* "joint below the limb," the stout peduncles often narrowed near the junction with the stem, the absence of leaves rounded at the base, and the general habit, combine to leave one in doubt as to whether the plant is not entitled to the specific rank Fryer finally accorded it. The R. Loddon, Berkshire, is given as the only habitat.

✓ P. GRIFFITHII Ar. Bennett. This is said to be *P. nerviger* Wolfg. ap. Schultes Mantissa iii., 359, 1827 (= *P. alpinus* × *praelongus*). Against the presumption that it is a sub-species or var. of *P. alpinus* is put the occurrence of cortical bast in the stem. "Its hybrid origin, however, is beyond all doubt and may nowadays be disputed in earnest by nobody." Only 2 stations are known, one in Lithuania and the other in England, Llyn-an-afon, near Aber, Carnarvon. (On the above, see *Journ. Bot.* 15, 1919.)

P. LANCEOLATUS Smith is regarded as the hybrid *P. alpinus* × *pusillus*. This also is open to considerable doubt (see *Journ. Bot.*, *l.c.*) I agree with Mr Bennett that the leaves are not "obtuse"—certainly not so obtuse as shown in the figure (68)—but sub-acute. The stations given are England, Anglesea, 1808 (Davies); R. Lligwy

(Bailey); Cambridgeshire, Burwell Fen (Bennett); and one station in France. No others are known.

P. POLYGONIFOLIUS Pourret. The author admits that "this species shows great affinity with *P. coloratus*. The styles and stigmas are quite the same, and the stem-anatomy is so near alike that it is practically useless for the distinction of the species." In regard to the variations of this polymorphic species Dr Hagström admits the vars. *cordifolius* and *lancifolius* Cham. and Sch.; *amphibius* Fries, "to which belong such forms as *ericetorum* Syme." He considers this last to be probably the same as f. *rotundifolius* Fischer: and f. *angustifolius* Fries, f. *largior* Tiselius and v. *pseudo-fluitans* Syme to be indistinguishable from v. *lancifolius* Cham. and Sch. The short-petioled submerged leaves of f. *cancellatus* Fryer "make it a more dubious form and if not a hybrid it may be considered a form of v. *lancifolius*." No British references are given under distribution.

P. COLORATUS Vahl. This species is briefly treated and the British stations recorded are:—England—Kent, Cambs, Norfolk, Yorkshire and westward in Herefordshire. A new hybrid *P. anglicus* Hagstr. (*P. coloratus* × *polygonifolius*) is created upon specimens from Woking Heath, Surrey, 1881 (Ar. Bennett). Considering the author's own opinion (quoted above) of the similarity between the two supposed parents this seems a somewhat hazardous proceeding, and there is nothing in the brief description given which seems to justify it.

P. BILLUPSII Fryer is considered to be the hybrid *P. coloratus* × *gramineus*. The short note on this hybrid is mainly concerned in showing that Fryer's presumed *P. coriaceus* × *coloratus* is untenable as the plant shows no trace of *lucens*. The only recorded stations are Parsonware Drove, Benwick, Cambs., and a rivulet in Gothland, Sweden.

P. NATANS L. Of this the writer says "terrestrial forms have the same anatomical stem-diagram as the forms of running water and investigations have proved that the anatomical conditions are fixed." He gives the following varieties:—*vulgaris* Koch et Tiz. with leaves broadly oval; *ovalifolius* Fieber with leaves ovate-oblong, about 110 x 30 mm.; *rotundifolius* Brébisson with leaves large and roundish; *prolixus* Koch with leaves oblong-lanceolate and internodes and petioles long; *pygmaeus* Gandin, a small, shallow-water form; and *terrestris* Gray. No British stations are quoted.

P. GESSNACENSIS Fischer. (= *P. natans* × *polygonifolius*). Under var. *Richtsfeldii* Fisch. = f. *hibernicus* Hagstr., is included the plant gathered by R. M. Barrington in 1874 at Killarney—labelled *P. polygonifolius*, var. *linearis*—and probably also that gathered by R. W. Scully at Long Range, Killarney, in 1888. Fryer considered these merely states of *P. natans*.

P. GRAMINEUS L. The author's treatment of this extremely polymorphic species is eminently sound and convincing. In my experience, no genus is more highly sensitive to differences in environment than *Potamogeton*, and of its various species none more so than the one under notice. Mr Fryer used to say that with the rarer species he could often tell which particular station specimens had come from, by a study of their facies. Dr Hagström recognises this power of adaptation, and adopts habitat as the basis of his classification:—Long-leaved river forms—var. *fluvialis* (Fries); deep-water forms, with shorter leaves and more branched stems—var. *lacustris* (Fries), and shallow-water forms, under var. *heterophyllus* Fries. He emphasises the point that no change in the stem-anatomy results from these differences of environment. "It remains steadily the same under different external conditions." Botanists who have any extensive acquaintance with *P. gramineus* as a living species will endorse Hagström's final conclusion—"there are no reasons for taking out from the species such forms as *P. varians* Mor., *P. graminifolius* Fryer, or *P. nigrescens* Fries. The specific differences of these so-called "species" are not, in reality, so prominent as the descriptions suggest. They all belong to the varying power of the species and do not go above it." Numerous "forms" are included under each of the three varieties, *fluvialis*, *lacustris* and *heterophyllus*, and some of these are referred to in the author's notes on the distribution of British species. He considers that Fryer's Cambridgeshire and Huntingdonshire specimens, sometimes labelled *P. varians* Mor., sometimes as *P. falcatus* Fryer, are "mostly pure *P. gramineus*, f *nigrescens* Fries." So also are specimens from Grunty Fen (Nos. 1732, 2243, 1277), likewise Nos. 2056, 2057 from Block Fen, Chatteris, and No. 2054 from Witcham Meadlands, Mepal. "Nos. 2156 and 2160 (same locality) are *P. Zizii*, or sooner, *gramineus* × *Zizii*."

Nos. 1265, 1275, 1086 from Stocking Fen, Ramsey, Hunts, are "true *P. gramineus* verging to f. *jemtlandicus* Tis., or f. *nigrescens* Fr." (For further notes on *P. falcatus*, see under × *P. nitens.*)

P. ZIZII M. & K. (=*P. gramineus* × *lucens*). This hybrid assumes "all conceivable transitions from the most *gramineus*-like to the most *lucens*-like forms. Its fruiting faculty appears nearly undiminished or normal in some of the crosses, in most forms considerably reduced, and in many cases quite lacking." This seems a fair statement of the facts, and so we are surprised to find on the same page, "I am persuaded that *P. Zizii* very rarely, if ever, propagates itself by seeds." I cannot accept this conclusion—at any rate so far as the forms growing in the English Lakes are concerned. His classification consists of two varieties:—*validus* Fieber, with short internodes, and *elongatus* (Fieber) Reichenb., with long internodes, 10 cm. or more. Under the former are five "forms," one of which, f. *coriaceus* (M. & K.), is synonymous with *P. coriaceus* Fryer. The British stations cited are Cauldshields Loch, Melrose, Roxburgh; Coniston Lake, N. Lancs,—var. *elongatus* f. *foliosus* (Tis.) —: Fryer's specimens from Cambridgeshire (Doddington, Sutton, Chatteris and Mepal), "mostly var. *validus*, f. *coriaceus* (M. & K.), but the other forms are represented in typical specimens and transitions between them"; Huntingdonshire in several places; Llwidiard Lake, N. Wales; Kingham Loch, Scotland.

P. CRASSIFOLIUS Fryer. (=*P. gramineus* × *lucens* × *natans*). Little is said of this hybrid except that "the specimens from Westmoor, Doddington, Cambs, under No. 1668 must be considered to have the greatest probability for this descent; also Nos. 422 and 423 from Doddington."

P. KIRKII Syme. (= *P. gramineus* × *natans*) = *P. sparganifolius* Laestadius, ap. Fries. The author contends that as the name *P. nitens* Weber is used to cover all forms of the hybrid *P. gramineus* × *perfoliatus*, so that of *P. sparganifolius* should be applied to the hybrid here concerned. The British references are to specimens from Surrey (Bennett); R. Ure, Yorkshire (Nicholson as *P. polygonifolius*); Shobden Marsh, Herefordshire (A. Ley); Lough Corrib, Galway (Kirk); Maam, Galway (Linton); and "a dubious form from Caithness (Marshall)."

P. NITENS Weber. (*P. curvifolius* Hartm. *P. salicifolius* Wolfg.

P. falcatus Fryer, and *P. salignus* Fryer). (= *P. gramineus* × *perfoliatus*). The long and detailed treatment of this polymorphic hybrid is one of the best in the monograph. The descriptions are concise, scholarly, and admirably illustrated. In regard to the vexed question of the fruiting faculty of the hybrid, Dr Hagström is clearly on safe ground when he states that "the greatest part by far (of all specimens) show partly complete sterility, partly a much reduced fruiting ability, and when the fruit production seems normal a great percentage of the fruits will be found to be more or less defectively developed." His classification is based on the upper portion of the stem with its involucral leaves and different habit. He gives three varieties:—(a) *subgramineus* (Raunkiaer) Hagstr., having primary involucral leaves narrowed at the base and ± petiolate; secondary often conspicuously petiolate, sub-coriaceous or coriaceous; (b) *subperfoliatus* (Raunkiaer) Hagstr., having both primary and secondary involucral leaves, cordate and sessile; (c) *subintermedius* Hagstr., an intermediate group. Under (a) are 7 forms, one of which is f. *involutus* Fryer; under (b) are 10 forms, and (c) includes a similar number. A very exhaustive list of specimens in the Swedish museums includes those from Surrey (Beeby), f. *typicus*; Cambs, Witcham Meadlands, Mepal, No. 192 (Fryer); Huntingdonshire, Stocking Fen, Ramsey, No. 1265 (lab. *P. falcatus*) Fryer is f. *typicus*, under (c) above; Aldershot Canal (Bennett) labelled "*P. heterophyllus* Schreb., var. *pseudo-nitens* mihi. *Journ. Bot.* 344, 1881," is "an unambiguous *P. nitens* with half-clasping leaves": Scotland, White Loch, E. Perth (Sturrock)—similarly labelled—is a clear *P. nitens*; Kirbiston Loch, Orkney (Syme).

P. Seemenii Asch. et Graeb. (= *P. gramineus* × *polygonifolius*). A dubious plant from Scotland, gathered by F. Coles, is possibly this hybrid.

P. lucens. The description of the morphological characters of this species contains little that is new and the only reference to Britain is that in the Swedish museums there are a great many specimens from England—among other countries.

P. sterilis Hagstr. This is the *P. fluitans* Anett. = *P. lucens* L. × *natans* L. The author admits the difficulty of distinguishing *P. sterilis* from *P. crassifolius*, but relies on "the influence from *P. gramineus* which is to be traced in the latter but not in *P. sterilis*."

The Fryer specimens of *P. crassifolius* from Horseload Fen Drain, Chatteris, and The Engine Drain, Mepal, are assigned to *P. sterilis* after "eager and careful investigation," but the Doddington plants are presumed to be *crassifolius*, "since they have something in their habit reminding of *gramineus* as well as of the two other species."

P. DECIPIENS Nolte. (= *P. lucens* L. × *perfoliatus* L.). After an exhaustive survey of the recent literature on the subject, Dr Hagström comes to the conclusion that "the Swedish forms under the names of *P. decipiens* and *P. upsaliensis*, and also those distributed by Tiselius under the Nos. 68-74, 77-84, belong to a single hybrid." He also holds that all the German forms he has seen, including those distributed by Nolte himself, named *P. decipiens* are the same hybrid, and contends that "the Noltean name of *P. decipiens* ought to be used of all forms" of it. His classification is based on the size and shape of the leaves :—(a) var. *latifolius* Hagstr., upper stem-leaves about 100 x 25-40 mm.; (b) var. *brevifolius* Hagstr., leaves shorter and narrower; (c) var. *longifolius* Hagstr., leaves 150-200 x ± 20 mm. The only British station cited is Cambridgeshire (Fryer).

P. BABINGTONII Ar. Benn. (= *P. lucens* × *praelongus*). The author admits that some Danish forms of this come very near *P. decipiens* but "having once seen a true *lucens* × *praelongus* and studied its peculiarities (the aspect of the leaf-margin, the very apex of the leaves, &c.) you will soon be able to distinguish between this very rare hybrid and the much commoner *P. decipiens* Nolte." His only British reference is to the Babington Irish plant from L. Corrib, figured in *E. B. Suppl.* t. 2847, of which he says "it is not known to me if this entirely coincides with the Danish form." He distinguishes the Irish form as f. *longifolius* (Bab.).

P. PRAELONGUS Wulfen. The description of this species is very short and the classification along recognised lines. The varieties are *latifolius* Alpers, *brevifolius* Celak., *angustifolius* Graebner, and *elegans* Tis., with elongated leaves 210-250 x 20 mm., and long upper internodes. The f. *curvatus* n.f. has strongly recurved leaves. Under Distribution are included British Isles and the Shetland Islands.

P. RICHARDSONII (Ar. Benn.) Rydb. Following Fernald, in *Gray's New Manual* 74, 1908, the author admits this as a valid species and gives lengthy reasons for his belief. Briefly they include :—(a) both pollen and fruit relatively well developed ; (b) marginal denticulation different from that of *P. perfoliatus*, leaves more recurved, ligules different, and stigma lower ; (c) the presence of some (even though inconsiderable) independent properties ; (d) its occurrence, not only on scattered stations, like a hybrid ; and (e) the constancy of its properties. No British stations are given.

P. PERFOLIATUS L. The treatment of this extremely variable species is somewhat unexpectedly slight and contains little that is new. The classification, indeed, is that of nearly a century ago.—var. *ovatifolius* Wallr. (1823), var. *rotundifolius* Wallr. (1823), and var. *gracilis* Cham. et Sch. (1827), which includes forms with comparatively long and narrow leaves such as f. *lanceolatus* Blytt. There are no records of British stations given.

P. DENSUS L. The anatomical characters of this are very fully described but the distribution is only moderate—" in England at many stations, the most northerly known to me is Howden (Storey)."

Note.—Since the above review was written I have submitted a large number of sheets of doubtful plants of most of the British species to Dr Hagström, and will give his invaluable determinations and comments in a subsequent paper.—W. H. P.

POTAMOGETON DRUCEI FRYER IN FRYER'S CORRESPONDENCE.

By G. C. DRUCE.

Although in his *Potamogetons of the British Isles* 31, 1898, Fryer published this plant as a hybrid he subsequently (*Journ. Bot.* 524, 1899) definitely raised it to a species and whatever may have been his later views he never published any alteration. Speculations as to the grade of several Pondweeds, including this one, engrossed much of his time, and this speculative theorising led him to vary his views. In the last interview but one I had with him he suggested *lucens* × *polygonifolius* as a possible combination but then asked "whence came the sub-crested keel to the fruit, and why if from *natans* × *lucens* has it no phyllodes?" At our next and last meeting in 1910 he said he felt very doubtful about it, but thought it must be a good species. He was then 84 years of age. As many know Fryer was an excellent letter writer and, apart from that side of his character, the following extracts from his letters regarding the Loddon Pondweed may be of interest as showing his way of working, his endeavours to unravel problems, and the ingenious methods of his speculative mind. The letters have been slightly condensed. Oct. 3, 1893. "Thanks for very interesting parcel. At a glance I think you are right in not naming the new form *fluitans* Roth. It seems away from that by the thick under midrib. Most likely it is as you say, *natans* × *alpinus*. [These two species grew with it.] I have continental forms, named *fluitans*, very like it, but will carefully compare it with my very large set of *fluitans* forms. Send me *lucens* from the same stream. Possibly the Berks plant may deserve a new name, in which case I hope you will name it, prefixing × to show it is a hybrid." Oct. 17, 1893. "Until to-night I have been unable to complete my examination of your remarkable form of *fluitans*. I think you may safely so name it, although some specimens resemble the fruiting American plant (*P. americanus*) more closely than any *fluitans* I have seen before. The *alpino-natans* has nothing to do with the Berks plant which is no doubt *lucens* × *natans* = *fluitans* Roth." [On this statement it was put under *fluitans*, as an untypical form, in the text of the *Fl. Berks* 1897.] Aug. 18, 1896. "Much regret you have not sent living roots of the Berkshire '*P. fluitans*.' It is a very doubtful plant and possibly may be only a form of *polygonifolius* or perhaps that species and *natans*. It is not like any other *fluitans*-form in my herbarium, yet to me it seems to fall under that segregate. Bennett, however seems to doubt it." [In the Additions to *Fl. Berks*, inserted before publication, this is noted.] Sep. 1, 1898. "Your magnificent Pondweed arrived in perfect condition and the roots are all that can be desired. You will expect an 'opinion.' I cannot give you one off-hand: you shall, however, have my first impressions, which often are very suggestive, even if those of an inexperienced and non-botanical observer. Certainly I cannot refer this plant to any form known to me. The rootstock seems to remove it from typical *fluitans*, though probably it will range itself in or near the *fluitans*-group. *P. polygonifolius* × *alpinus* is the × the rootstock suggests, also the structure and venation of the leaves. I am strongly tempted to give it a plate after *P. Griffithii* (a probable hybrid of *alpinus)* and call it × *P. Drucei* = *alpinus* × *polygonifolius*. It would then fall into its proper place in the part of the Pot.-Book I am now working at. . . . Here I broke off to have another look at this beautiful plant. The rootstock is the puzzle. It indicates *coloratus*, an improbable plant. Can it be an abnormally vigorous form of *polygonifolius*? I think not. I still cannot get away from the idea of an *alpinus* ×. As far as I can ascertain *alpinus* has no permanent rootstock, but rests in winter in the buds produced at the ends of the growing stolons and in the axils of the leaves. . . *Polygonifolius* rests in the two or three terminal joints of the stolons, all the rest of the rootstock decays, so does that of *perfoliatus*. The stipules and absence of phyllodes remove it from *fluitans*. What plants of this genus does it grow with? I can see nothing of *natans* in it, only *polygonifolius*, *coloratus* and *alpinus*, three closely allied forms." Sept. 3, 1898. "The Berkshire *fluitans* is, I fear, only *polygonifolius*, a most distinct form, however. Perhaps it would be better to consider it a state rather than a form. Certainly the most beautiful of the many Pondweeds I have seen. I would like to figure it for a frontispiece to our book, and perhaps I may be able to do so. After all the differences between the rootstock of *coloratus* and *polygonifolius* are in the continued growth of the former throughout the year, and the total decay of the part which has produced the growing annual stems in the latter, which rests in the two or three terminal joints, just as *perfoliatus* does. . . . The glass-like substance of the membranous part of the leaf between the mid-rib is the wonderful part of your plant. It gives the appearance of lace-work. If it is *polygonifolius*, the regular outline of the floating leaves will soon disappear under cultivation and they will assume the angular look of the species." Sept. 14, 1898. "*P. Drucei* is behaving in a most extraordinary manner! Instead of conducting itself properly, in the quiet manner of *polygonifolius*, it is occupied in the task of providing winter buds, more like *alpinus*. After all, first impressions were right. It is probably *polygonifolius* × *alpinus*, and I am trying to get it figured in the forthcoming part. . . .

Morgan has drawn it. . . To my great surprise the young shoots come totally unaltered, showing that the characters are no temporary modifications due to running water. [It grows not only in deep, slowly moving water, but also in rapid shallows]. The beauty of the young shoots is extreme. . . . For mere beauty alone it ought to be grown in every tank devoted to water-plants. Its young leaves are perfect lace-work, the interstices connected by a thin film of glass. This film can only be seen in certain lights, but gives a green look to the interstices. White upon green is the scheme of colour. The character of the plant has only become known by the rapid growth of last week. It is rapidly establishing itself, a thing I can never get *polygonifolius* to do, for physiological reasons. *Drucei* is evidently prepared to rest in winter buds like *alpinus*, only they are more slender and will root and grow at once, I think. If so, the plant is evergreen like some other hybrids." Oct. 10, 1898. "Kindly send transcript of account of Berks *fluitans* = *P. Drucei* with proper references for quotation in my book." Oct. 16, 1898. "I do think you may quite likely [have been] right in saying that [it] is = *natans-alpinus*. The *alpino-natans* I referred to is the plant of Billot and named "*P. spathulatus* Schrad." It is not your Berkshire plant. (1). I really think that if I had to give an opinion on your first sent specimens again it would exactly correspond with my first one, *i.e.*, *P. fluitans*, but too like *americanus*. (2). Flowering specimens having been obtained, it is evidently a hybrid, therefore not *americanus*, so it must be *fluitans*. (3). Better specimens with better lower leaves said clearly it was not Roth's *fluitans*. (4) The living plant, certainly quite new to me, then on growth, exactly the plant described by Syme as *pseudo-fluitans*—not matching the type or any other specimen of that form but yet exactly matching his description. (5). The plant showing difference in rootstock, resting buds, and autumnal growth which puts it quite away from *polygonifolius* (which Bennett and I for some years have suspected it to be) and which indicates hybridity to me and a cross with *alpinus*. Now comes the difficulty. *Alpinus* × ? In my book I analyse all possible crosses, *natans*, *polygonifolius*, *lucens*. One of the three it must be, if you have observed accurately and really exhausted the Loddon Pot. flora. Not one of the crosses holds good all through. To accept any one of them we must encounter (and not solve but cut) some difficulty. You will see how I have tried to do this. To me the difficulty is not insuperable but, anarchist as I am, I am bound to respect the opinion of other and better botanists, though perhaps they may have had less experience of the life-history of Pots. than I, from my long residence in the fens, have been able to obtain. Therefore, clear as it may seem to me, I am compelled to feel a certain amount of doubt when I remember what other botanists think on these matters. You will, perhaps, wonder why I make this elaborate defence of my mistakes to you and do not make it to the public. . . . I take my own advice. . . . and leave my reputation as a Pot.-man to take care of itself. If it deserves to suffer, I am content. If it does not, and I think it does not, it will all come right in time. Those who take my writings in their hands and study with me, not merely accepting but testing in the field what I advance, will not require any defence of my opinions at my hands or those of another. You have spoken too generously of me both in your *Flora* and in your pamphlets. I am grateful, but should be more so if you will get me next year a full series of living specimens from deep, medium and shallow water of *Drucei* in flower and also the Loddon *polygonifolius*." Dec. 10, 1898. "I hope you admire Mr Morgan's beautiful drawing of *P. Drucei*. It has flowered most profusely. I am delighted with the plate of this part and the colourist has done his share of the work very well too." [It was published as a full species in *Journ. Bot.* 521, 1899] Nov. 21, 1899. "Have I not already told you about *P. Drucei*? It has flowered most profusely and produced a fair number of fruits on each spike. These Bennett cannot match with any known species. Nor are they of any European type; hardly like any others. Also the winter-buds now thrown out are unlike any known to me. So now I drop all × before it, and regard it as a full species, *i.e.*, *P. Drucei*. So, in our *Flora*, you may put one endemic Pot. (on present knowledge), and I shall feel delighted in seeing how you account for its presence in England." Sept. 17, 1900. "Thanks for the tins of *P. lanceolatus*. . . . It has grown splendidly, so has *Drucei*. The latter has fruited profusely and Morgan has made lovely drawings of it." July 6, 1909. "*P. Drucei* is magnificent with me this year, surely the most beautiful leaved water-plant. Can or will any one at Oxford examine the pollen to determine its claims to be a species, rather than a hybrid. If so I should like to send a spike for examination. Pollen is produced abundantly this year." [This was examined in the Bot. Lab. at Oxford and found to be normal]. Oct. 5, 1909. "You got those wonderful leaves of *Drucei* I hope? E. was much pleased with the plant altogether, and it has perfect looking fruit." Thus ends the correspondence about it.

The plant has a restricted range of about a mile or two on the Loddon river in Berkshire. Recently it has been found in the Avon, near Bath, where *alpinus* has not been recorded. Allusion was made (*Journ. Bot.* 82, 1918) to the red coloration of the leaves of the Loddon plant, but that statement is imaginary. I have not noticed such nor mentioned it either in *Fl. Berks*, my pamphlets, or *Hayward's Pocket Book*. On the contrary the leaves have a most beautiful green, translucent tint. White upon green was Fryer's description of the colour scheme. Hagström (*Researches*) considers it to be *alpinus* × *natans* and he bases this on some structural characters which he says he has observed. Whether there are confined to these two species or peculiar to each I am not sure. With all deference to this critical student, the objections urged by Pearsall against it await refuting. It is curious that my first impression should be the one fixed upon by Hagström. Subsequent study of it in various conditions, the free-flowering, healthy pollen and free-fruiting seem to negative the combination of *natans* × *alpinus*, nor can one, in the living plant, find any trace of the distinguishing features of either species. It must be conceded that a hybrid is not necessarily a half-way house. That Mr Fryer's opinions about it were almost in a state of flux shows the difficulty of assigning it a definite parentage. The line of least resistance appears to be to leave it under the grade Mr Fryer's more matured experience led him to assign to it—a full species.

ADVENTIVE PLANTS ON WASTE GROUND, BRADFORD, YORK, 1919.

By John Cryer.

90. *Glaucium corniculatum* Curt. 224. *Brassica incana* Schultz (*adpressa* Boiss). 339. *Silene conoidea* L. 461. *Hibiscus Trionum* L. 449 (21). *Monsonia biflora* DC. 491. *Erodium malachoides* Willd. 550. *Trigonella polycerata* L. 552. *T. corniculata* L. 665. *Scorpiurus subvillosa* L. 681. *Vicia villosa* L. 906. *Potentilla norvegica* L. 1045. *Lythrum Hyssopifolia* L. 1065. *Oenothera odorata* Jacq. 1157. *Coriandrum sativum* L. 1255. *Aster novi-belgii* L. 1273. *Gnaphalium luteo-album* L. 1297. *Rudbeckia laciniata* L. 1306. *Guizotia abyssinica* Cass. 1336. *Santolina Chamae-Cyparissus* L. 1363. *Matricaria suffruticulosa* Druce. 1380. *Artemisia biennis* Willd. 1463. *Centaurea melitensis* L. 1486. *Hedypnois cretica* Willd. 1742. *Anagallis femina* Mill. 1787. *Lappula echinata* Gilib. 1851. *Physalis peruviana* L. 2089. *Plantago indica* L. (*ramosa*). 2105. *Herniaria hirsuta* L. 2113 (2). *Amaranthus Thunbergii* Moq., f. *maculatus* Thell. 2114 (2). *A. Dinteri* Schinz, var. *uncinatus* Thell. 2116. *A. spinosus* L. 2130 (2). *Chenopodium paniculatum* Hook. 2131 (2). *C. striatum* Kras. × *album*. 2151. *Atriplex rosea* L. 2390. *Asphodelus fistulosus* L. 2680. *Phleum paniculatum* Huds. 2729 (2). *Chloris virgata* Sw. 2815. *Bromus macrostachys* Desf. (*oxyodon* Schrank).

ADVENTIVE PLANTS OF THE GLASGOW AREA.

In the counties of Renfrew (R.), Lanark (L.), Ayr, and a few from Belfast and Dublin, Ireland.

By R. Grierson.

61. *Delphinium orientale* J. Gay. 90. *Glaucium corniculatum* Curt., Possil (L.). 93. *Eschscholzia Douglasii* Walp., Glas-

gow, Dublin. 126. *Radicula islandica* Druce (*Nasturtium palustre)*, as an abnormal form with small flowers. 131. *Arabis muralis* Bert., Anniesland (L.). 183. *Sisymbrium Sophia* L. 184. *S. altissimum* L., Anniesland, common (R. & L.), Belfast. 185. *S. orientale* L., Possil (L.), Troon, Ardrossan, Ayr. 198. *Erysimum repandum* L., Anniesland (L.). 200. *Conringia orientalis* Dum. 202. *Camelina sativa* Cr., Possil (L.). 217. *Brassica alba* Boiss. 219. *B. juncea* Coss. 222. *B. Pollichii* Druce, Newlands (L.), Ardrossan, Ayr. 227. *Diplotaxis muralis* DC., Ardrossan, Ayr. 238. *Eruca sativa* Mill., Possil (L.). 258. *Vogelia paniculata* Horn., Possil (L.). 262. *Bunias orientalis* L. 267. *Rapistrum orientale* DC., Possil (L.). 268. *R. rugosum* All., Ardrossan, Ayr. 283. *Reseda inodora* Reichb., Possil (L.). 286. *R. odorata* L. 331. *Saponaria Vaccaria* L. 341. *Silene dichotoma* Ehrh. (ex Mr Lee). 450. *Malva Alcea* L., Newlands (L.). 548. *Trigonella Foenum-graceum* L., Possil (L.). 554. *T. M. coerulea* (Ser.) Druce, Possil (L.). 595. *Melilotus alba* Desr. 596. *M. arvensis* Wallr., Newlands (L.). 597. *M. indica* All., Newlands (L.). 630. *Hosackia americana.* 655 (2). *Astragalus Cicer* L., Giffnock (R.). 666. *Coronilla varia* L., Gartcosh (L.). 676. *Cicer arietinum* L., Ibrox, Possil (L.), in two variations. 707. *Lens culinare* Med., Ibrox (L.). 722. *Lathyrus sativus* L., Ibrox (L.). 726. *L. Aphaca* L. 895. *Potentilla argentea* L., Anniesland (L.). 896. *P. intermedia* L., Gartcosh (L.). 906. *P. norvegica* L., Gartcosh (L.). 1061. *Oenothera biennis* L., Gartcosh (L.). 1182. *Symphoricarpos racemosus* Michx. 1262. *Erigeron canadense* L. 1291. *Ambrosia artemisifolia* L., Possil (L.). 1292. *A. trifida* L. and var. *integrifolia.* 1301. *Helianthus annuus* L., Possil (L.). 1302. *H. rigidus* Desf. = *scaberrimus* Elliot. 1303 (3). *H. debilis* Nutt., Possil (L.). 1314. *Madia sativa* Mol., Possil (L.). 1356 (6). *Chrysanthemum maximum* DC. 1362. *Matricaria discoidea* Buch., common. 1371. *Artemisia Abrotanum* L. 1380. *A. biennis* Willd., Gartcosh (L.). 1383. *A. gnaphalodes* Nutt., Tollcross. 1433. *Cirsium setosum* C. A. Mey. 1459. *Centaurea diffusa* Lam., Ardrossan, Ayr. 1363. *C. melitensis* L., Newlands, Possil (L.). 1465. *C. Calcitrapa* L., Possil (L.). 1477. *Carthamus tinctorius* L., Ibrox (L.), Ardrossan, Ayr and var. *inermis*

Schw., Ibrox (L.). 1489. *Picris hieracioides* L., Ardrossan, Ayr. 1649. *Lactuca Serriola* L., Ibrox (L.). 1673. *Campanula Trachelium* L. 1674. *C. Rapunculoides* L. 1729. *Androsace maxima* L., Possil (L.). 1768. *Collomia linearis* Nutt., Anniesland (L.). 1780. *Phacelia tanacetifolia* Benth., Anniesland, Possil (L.). 1787. *Lappula echinata* Gilib. 1789 (3). *Benthamia lycopsioides* Lindl. 1818. *Myosotis dissitiflora* Baker. 1849. *Solanum triflorum* Nutt. 1867. *Verbascum nigrum* L., Bowling. 1951. *Rhinanthus major* Ehrh., Possil (L.). 2031. *Salvia verticillata* L., Gartcosh quarry (L.). 2039. *Dracocephalum parviflorum* Nutt., Maryhill, Possil, Ibrox (L.), Giffnock (R.). 2048. *Sideritis montana* L., Possil (L.). 2110. *Amaranthus retroflexus* L., Newlands (L.). 2124. *C. lanceolatum* Muhl., Possil (L.). 2125. *Chenopodium leptophyllum* Nutt. 2129. *C. polyspermum* L., Possil (L.). 2153 (2). *Axyris amarantoides* L., Possil (L.), &c. 2192. *Fagopyrum sagittatum* Gilib. 2193. *F. tataricum* Gaertn. 2176. *Polygonum tomentosum* Schrank, Gartcosh (L.). 2207. *Rumex maritimus* L., Possil, Anniesland (L.). 2210 (6). *R. salicifolius* Weinm. 2210 (10). *R. magellanicus*. 2240. *Ricinus communis* L. 2248. *Cannabis sativa* L., Ibrox (L.). 2360. *Sisyrinchium angustifolium* Mill., ? Giffnock (R.). 2263 (3). *Tritonia crocosmiflora* Nich., Helensburgh, Dunbarton. 2390. *Asphodelus fistulosus* L., Possil (L). 2459. *Phoenix Dactylifera* L., Ibrox (L.), &c. 2639. *Setaria viridis* Beauv., Newlands (L.). 2645. *Zea Mays* L. 2849. *Hordeum murinum* L., Robroyston (L.). 2851. *H. jubatum* L., Newlands (L.).

PLANTS OF HARBURY CUTTING, WARWICKSHIRE.

By E. Marsden-Jones, F.L.S.

157 species were observed on the G.W.R. cutting and spoil banks and on the allotment ground known as Church Lands in June and July 1918. The localities are in District 5 of Bagnall's *Flora of Warwick*. The additional species to that district are given below, besides one or two others having some special point of interest.

Cotoneaster microphylla had not previously been recorded for the county. 217. *Brassica alba* Boiss. 226. *Diplotaxis tenuifolia* DC. [I have not seen this]. 285. *Reseda Luteola* L. 309. *Polygala vulgaris* L. 486. *Geranium pusillum* L. 972. *Cotoneaster microphylla* Wallich, naturalised. 1217. *Valeriana dioica* L. 1400. *Senecio sylvaticus* L. 1426. *Cirsium eriophorum* Scop., now spread to the cutting. 1502. *Crepis taraxacifolia* Thuill. 1657. *Sonchus asper* Hill, var. *glandulosus.* 2305. *Listera ovata* Br. 2342. *Habenaria virescens* Druce. 2920. *Ophioglossum vulgatum* L.

EDWARD MORGAN'S HORTUS SICCUS.

By G. Claridge Druce, LL.D.

In the Bodleian Library are three folio volumes (MSS. Ashmole 1797-9, which up to 1845 were kept in the Botanic Garden Library) bound in rough calf, each containing about 160 leaves, thus entitled in Bernard's Catalogue (1697), n. 6547 *Hortus Siccus sive Collectio Plantarum ab ipso Eduardo Morgano facta ordine alphabetico, bis mille circiter plantarum species exhibens.* This work seems to have been begun in 1672, since these words appear on the first page ' first great booke 72.' The names of some Plants found in North Wales are contained in the first volume, p. 12. There is a letter appended from Thomas Thornes to Edward Morgan, liveing att Bodesclen, offering anything in Leweny [Llewenny Hall, an ancient seat in Denbighshire, once the home in the eighth century of the chief of one of the fifteen tribes of North Wales]. The total number of plants in the *Hortus Siccus* is given as 2474. This collection, in which such authorities as Lobel, Parkinson, Gerard, Cornuti, Ray, Morison [*Hort. Blaes.*] are cited, consists of unlocalised plants. One however, ' Cardamine minus Oxford,' is *C. impatiens* and from the Oxford Physic Garden. Many are certainly native specimens, and twenty are said to come from North Wales which include *Cotyledon hirsuta* (*Saxifraga stellaris*), *Caryophyllata nutans* (*Geum rivale*). There is also a specimen of *Ulmus angustissima* which is *U. Plotii*, and another is the Red May or Hawthorn.

It is quite probable that this Edward Morgan is the same as the botanist of that name who is alluded to in Evelyn's Diary of 1658. Morison (*Plant. Umbellif.* 2, 1677) writes 'Dum haec scribo in Horto Edvardi Morgan, pone caenobium occidentale Westminster dictum, omnium hortulanorum Botanicorum quos unquam adii peritissimi,' and there are other references. Aiton (*Hort. Kew.* ii. 307, 1789) citing Plukenet (*Phyt.* t. 57, f. 6, 1691) ascribes the introduction of *Phlomis purpurea* which he had in cultivation in 1661 to Morgan, and adds 'ante triginta circiter annos in Horto D. Morgani luxuriantem observavimus.'

I am enabled to add a link to the chain of identification regarding Morgan, and also to identify the place where he lived in Wales, *i.e.* Bodesclan. This is now spelled Bodysgallan, and is about one mile from Llandudno towards Colwyn Bay. Thomas Johnson, the writer of the second edition of Gerard's *Herbal*, made a botanical expedition into North Wales in 1639. Of this journey he published an account under the title of *Mercurii Botanici pars altera* (1641), and from it we learn that he was accompanied by Edward Morgan, 'sed nobis antiquae Linguae Britannicae ignaris opus erat interprete, in quem finem Edoardum Morganum rei herbariae etiam studiosum nobis adiunximus, eique sumptus prebuimus' (p. 4). They stayed the night at Bodskalan, 'Dum ad octavum lapidem progressi amnem ad Aberconway traiecturi sumus, adest famulus V. Cl. D. Thomae Glynnaei [to whom Johnson dedicates his *Mercurius*] et significat herum suum nos expectare non procul hinc. Sic divertimus ad Bodskalan aedes viri nobilis et antiquae hospitalitatis: D. Roberti Wynn: ibi reliquum diei sequentem noctem transegimus.' The family of Robert Wynn (a branch of the Gwydur family) intermarried (so the eminent Welsh archaeologist, Mr J. Griffith, tells me) with the Morgans of Golden Grove (seat about 4 miles from Rhuddlan), and there was a son of Golden Grove who became a bencher of the Middle Temple in 1597 and who died in 1611. He had a son, Edward Morgan, who died without issue, who doubtless was Johnson's companion on this journey and who afterwards resided at Bodesclan. Mr Griffith thinks that it was the bencher who had a Herbarium, and it may be that the other Hortus Siccus in Bodleian (Ashmole MS. 1502) of an earlier date (?), consisting of about 400 specimens, chiefly medicinal plants, was made by the Bencher of the Middle Temple.

The identification of this is conjectural; that of the former is satisfactorily proved by the references in the *Mercurius*, and the suggestion that the Bodesclan botanist and the Westminster gardener and physician are the same person seems very probable.

In addition to the two Horti Sicci (MSS. Ashmole 1502 and 1797-99), the Bodleian possesses at least seven similar collections:—

Pressmark.	*Provenance.*	*Date.*	*Collector.*
MS. Arch. Seld. B. 3	Holland?	early 17th cent.	
MS. Ashmole 1465	England	17th cent.	
MS. Rawlinson C. 403	Barbadoes	early 18th cent.	
MSS. Ashmole 1800-1803	England	late 17th cent.	Sir Geo. Wheler.
MSS. Add. D. 94-97	England	17th cent.	Dr Wm. Howlet.
MS. Lat. misc. d. 26	Oxford	about 1710-15	Jacob Bobart?
MS. Lat. misc. b. 11	Oxford	early 18th cent.	Jacob Bobart?

—From the *Bodleian Quarterly Record*, 1919.

On GERANIUM PURPUREUM Vill. and G. ROBERTIANUM L.

By A. H. Evans.

There has undoubtedly been considerable confusion in the minds of British Botanists with regard to the relation between *Geranium purpureum* and *G. Robertianum*, as may be seen by the examination of both public and private Herbaria. Most of the specimens referred to the former certainly belong to the sub-species of *G. Robertianum*, which Babington called *maritimum*; while Rouy's form *littorale* and Hornemann's *rubricaule*† are, on present evidence, synonymous (see below). This is a decumbent and less hairy form found in dry sunny spots, such as the shingle beaches of southern England; but it has none of the special characteristics of *G. purpureum* Vill.* which is not enamoured of arid localities, and is generally found with us in woodlands or on hedgebanks.

G. purpureum is decidedly taller than *G. Robertianum*, when grown by its side, and more upright; it is almost glabrous on the

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† He says that it grows on shores.

* Villar writes "Geranium purpureum in silvalis rupestribus prope Pont-de Claix au Buis . . . a precedenti differt foliis simpliciter quinatis foliolis dentatis, nondum pinnatifidis, corolla kermesina minima."

stems and leaves, with no hairs on the nerves below in the latter: the segments of the leaves, moreover, are much more distant and often fold together when young. The flowers are small (as in *G. lucidum*), with yellow anthers in place of orange, the carpels not reticulated, but with comparatively broad ridges and narrow interspaces. In *G. Robertianum*, on the other hand, the so-called "ridges" are merely reticulations; and the carpels thus, perhaps, afford the most certain distinction between the forms. The name *purpureum* refers to the colour of the petals, and not to that of the stems, which are usually greener than in its congener. None of the forms of *G. purpureum* have the characteristic odour of *G. Robertianum* but wild specimens smell somewhat strongly. This plant, though closely allied to *G. Robertianum*, is certainly worthy of specific rank, as species are now understood in Botany, and can be distinguished at a glance under any of its forms in the fresh state, though not always in Herbaria, when lacking flower or fruit. Garden grown examples are even more characteristic. The confusion mentioned above is probably due in the main to Forster, who in the Supplement to *English Botany* described the plant from shingle beaches as *purpureum*, while he cited Villar in his synonymy. He figured a plant which appears to be a small-flowered form of *G. Robertianum*; but the whole matter is so doubtful that Forster's *purpureum* would be best entirely neglected.

The history of *G. purpureum* may, for our purpose, be taken to begin in the year 1785, when Villar in his *Flora Delphinalis* gave the name to a species, as he considered it, found at Pont-de-Claix, near Grenoble. Reichenbach gave a good figure (*Icon.* f. 1871 b.) shewing well the characteristics of the carpel, while other continental authors followed suit, as will be seen from the synonymy below.

In 1848 Jordan (*Adnot. Cat. Pl. Jard. Grenoble*) created two new species, *G. modestum*, and *G. Villarsianum* from Southern France, in addition to Villar's species. Later he described *G. semiglabrum*, *G. Mediterraneum*, *G. simile* and *G. minutiflorum*, as may be seen in the synonymy below.

We may now pass on to 1897 when Rouy in his *Flore de France* (vol. iv.) undertook to determine the status of each of these. He calls them varieties of *G. purpureum*, which he terms " une forme " of *G. Robertianum*, and adds to them *intricatum* of Grenier (*in litt.* et

Herb. Paris), *genuinum* Rouy and *littorale* Rouy. Of these *genuinum* is used for the typical *purpureum* of Villar.

In the *Flore de France* the forms of *G. purpureum* are primarily separated under two heads according to the appearance of the carpels—firstly, those with thick, membranous, rounded ridges thereon, and secondly, those with thinner and therefore more distant ridges. An examination of the fruits of specimens in the British Museum and elsewhere shews that this distinction holds well, and that we have three groups in the *Robertianum* section, though the two last are much more closely connected with each other than with the first.

(i) *G. Robertianum.* Carpels with distant reticulations which ought not to be called ridges.

(2) *G. purpureum.* (a) Carpels with thick, rounded, approximate ridges. (b) Carpels with more distant and much thinner ridges, yet distinctly not reticulations.

Under the first head (a) Rouy places Jordan's *Villarsianum*, with *semiglabrum* [if it be really distinguishable], *Mediterraneum* and *modestum*: under the second head (b) the remainder of the forms above mentioned. Here, however, our author makes a distinct slip, for not only do Museum types of Jordan's, but that botanist's own words (*rugis tenuibus*) in the original description, make it clear that *modestum* belongs to the second category. The creation of *genuinum* was quite unnecessary, as it is antedated by Villar's *purpureum*.

Rouy appears to be correct in subordinating *scopulicolum* to *genuinum* (= *purpureum*), though possibly it is hardly worthy of a special name, but we feel certain that his *littorale* is nothing but the shingle form of *Robertianum*. However, we must leave these points for further consideration when foreign specimens can be examined in a fresh state, and the same may be said of most of Jordan's "species." To recapitulate:—The low-growing, strong-smelling *Mediterraneum* and its very close ally *Villarsianum* (with *semiglabrum* if accepted) are in a "class by themselves," characterized by close broad ridges on the carpels; *purpureum* (= *genuinum* Rouy), *modestum*, *simile* and *minutiflorum* represent a second class with comparatively slender and distant ridges. In France the two first-named seem to occur only in the south.

It now remains to ascertain which of the above-mentioned plants have so far been found in Britain. With this object in view the writer has grown in his garden for several years examples of the various forms of *G. purpureum* that he has been able to obtain, and has found them all to be referable to *G. purpureum* Vill. They came from the undermentioned localities.

In 1837 Miss A. Carpenter, having noticed a curious *Geranium* in or near the Leigh Woods at Bristol, submitted specimens to the late Professor Babington. One of these is now in the Babington Herbarium at the School of Botany in Cambridge and is identical with others from the Leigh Woods where the plant was recognised (June 7, 1912) by Dr Moss, who grew it and compared it with other forms. His invaluable assistance in elucidating many points with regard to the *Geranium* here considered must be fully acknowledged by all who write on the subject, and by none less than the present author.

Previously to 1903, however, *G. purpureum* had been discovered by Mr Lester-Garland in Jersey, while in 1909 Mr C. Reid recorded it from Crantock and the neighbourhood in Cornwall.

A third locality at Torquay in Devon (Stewart *Handbook Torquay Flora* 26), where the plant occurs in at least two stations close to the town, dates back to 1860, while a possible fourth is near Plymouth whence the writer hopes soon to obtain examples which will definitely decide the question.

As above stated, all these localities must be assigned to *G. purpureum* Vill., unless the Plymouth form—not yet cultivated—proves to differ considerably. More doubt attaches to a *Geranium* collected by Mr J. E. Little on the coast near Bognor in Sussex. It does not appear to be the usual shingle form of *G. Robertianum* and may possibly be one of the other continental varieties. It must be seen *in situ*, and perhaps also cultivated, before a positive opinion can be risked.

Dr Druce has also a curious plant from the West of Ireland but the fruit in his specimens appears to shew that it is a form of *Robertianum*: and he tells me that Dr Ostenfeld has recently named it *celticum* (see present *Report* p. 551).

In conclusion the writer must offer his warmest thanks to the owners of Herbaria who have generously placed their specimens at his disposal; to the authorities at various Museums and last, but not least, to Mr J. W. White, Mr A. Gepp, and Dr Moss for guidance and information, which has enabled him to visit the several localities where the different forms grow. Mr A. J. Wilmott was even of more assistance as regards the carpels.

I now invite criticism, as I hope to write a second paper on the same subject next year with corrections and additions.

PROVISIONAL SYNONYMY.

G. ROBERTIANUM L. Sp. Pl. p. 955 (1763); Eng. Bot. xxi., t. 1486 (1805); Eng. Bot. ed. 3, ii., t. 305, p. 203 (1863), &c.

Var. *rubricaule* Hornem. in Wilk. and Lange Prodr. Fl. Hisp. iii., p. 531 (1878); Forst. Eng. Bot. Suppl. t. 2648 (1831), partim (as *purpureum*); Bab. Man. ed. 3, p. 62 (1851), (as *maritimum*); Rouy Fl. France iv., p. 98 (1897), (as *littorale*).

[Var. *crassicaule* Rouy Fl. France iv., p. 95 (1897).]

[Var. *graniticarum* Martr.-Don. Pl. Crit. Tarn. p. 17, &c.]

G. PURPUREUM Vill. Fl. Delph. p. 72 (1785); Hist. Pl. Dauph. i., p. 272, iii., t. 40, p. 374 (1786, 1789); Reichb. Icon. f. 4871 b; Viv. Fl. Lyb. p. 39; Eng. Bot. Suppl. t. 2648, 1831, partim; Bor. Fl. du Centre de la France ed. 3, ii., p. 131 (1857), (as *modestum*); Jord. Bull. Soc. Bot. Fr. vii., p. 605 (1860); Stewart Handb. Torquay Fl. p. 26 (1860); Eng. Bot. ed. 3, ii., t. 306, p. 204 (1863), partim; Gren. et Godr. Fl. France i., p. 306 (1874), (as *parviflorum*); Briggs Fl. Plym. p. 74 (1880); Lester-Garland Fl. Jersey p. 103 (1903); Reid in Rep. B.E.C. p. 429 (1909); Druce, ibid. p. 550 (1910), partim; White, ibid. p. 241 (1912).

[Var. *Villarsianum* Jord. Adnot. Pl. Jard. Grenoble p. 3 (1849); Pugillus p. 38 (1852).]

[Var. *semiglabrum* Jord., ex Bor. Fl. du Centre de la France ed. 3, ii., p. 130.]

[Var. *Mediterraneum* Jord. Pugillus p. 40.]

Var. *purpureum* Vill., as above; Rouy Fl. France iv., p. 97, (as *genuinum*); Jord. Bull. Soc. Bot. Fr. vii., p. 605 (1860), (including *scopulicolum* Jord.).

[Var. *simile* Jord. Bull. Soc. Bot. Fr. vii., p. 606.]

[Var. *modestum* Jord. Adnot. Pl. Jard. Grenoble p. 3; Jord. Bull. Soc. Bot. Fr. vii., p. 605.]

[Var. *intricatum* Gren. in litt. et in Herb. Mus. Paris (ex Rouy Fl. France iv., p. 98.]

[Var. *minutiflorum* Jord. Pugillus p. 39.]

The square brackets shew that the varieties are not British.

MISCELLANEOUS NOTES.

Among the members who have changed their addresses recently are our very respected past secretary, Mr Charles Bailey, M.Sc., who has gone to Sandhurst, St Mary Church, Torquay; our Rose specialist, Lt.-Col. A. H. Wolley-Dod, whose address is now Glenrinnies, Tadworth, Surrey; Professor A. H. Trow, now Principal of the University College of Wales and Monmouth; Miss Ethel N. Thomas now Keeper of Botany in the Nat. Museum of Wales to which Mr A. E. Wade has also become attached. Lt. C. V. Marquand and Mr T. F. Jenkins have become part of the staff of the Agricultural College at Aberystwith. Our members, the Rev. A. E. Woodruffe-Peacock and the Rev. F. Alston, have changed their abode in Lincolnshire, a county which owes much to their patient investigations. Mr R. J. Lynch, M.A., has well earned his retirement from the curatorship of the Cambridge Botanic Garden where he has so distinguished himself.

Mr W. G. Craib of the Botanical Department at Edinburgh has our hearty congratulations upon his succeeding to the post of Professor of Botany at his own University of Aberdeen.

An excellent appointment has been made in selecting Dr S. F. Harmer as Keeper of the Natural History Museum, South Kensington.

Dr J. B. Hurry has generously increased the Michael-Foster Research studentship from 100 guineas to £200.

Sir David Prain is to be congratulated upon the erection of the mammoth flag-staff of Douglas pine, 225 feet high, at Kew without any accident or hitch. Long may it tower over him in the beautiful Gardens under his care.

The Rev. H. J. Riddelsdell, M.A., Wigginton Rectory, Banbury, will be glad if members will send him their desiderata of British Rubi, as he will be glad to supply such as he can with the *B.E.C.* Parcels.

BOOKS IN PREPARATION AND SHORTLY TO BE ISSUED.

Druce, George Claridge. Flora of Oxfordshire, Second Edition, rewritten. In the Press. Clarendon Press, Oxford.

Groves, James, and Bullock-Webster, Rev. Canon J. R. British Charophyta, Vol. i., Nitelleae. To be published by the Ray Society. [Published in 1920.]

Horwood, A. R. The Outdoor Botanist. T. Fisher Unwin.

Salmon, C. E., F.L.S. The Flora of Surrey.

Shoolbred, W. A. The Flora of Chepstow. Taylor & Francis, Red Lion Court, London. [Published in 1920.]

ADDENDA, 1920.

Orchis hircina has been found in Oxfordshire by Mr T. J. Wall and I have seen it *in situ*.

Carex riparia Curt., var. *gracilis* Coss. & Germ., has been detected by Mr W. B. Turrill in Mr Thurston's Cornish collection.

Lathyrus niger Bernh. has been found by Mr W. F. G. Seeley in a wood in Warwickshire, apparently native.

Veronica acinifolia L. has been found by Mrs C. H. Wilde and Mr E. B. Bishop in great quantity in a barley field near Milford, Surrey, where I have seen it under their guidance. A further note will appear in our next *Report*.

Illecebrum verticillatum L. Reported from New Forest, S. Hants, by J. F. Rayner.

Tolypella nidifica and *Chara canescens*. Found at Loch of Stennes, Orkney, by G. C. Druce.

SUPPLEMENT TO REPORT OF BOTANICAL SOCIETY AND EXCHANGE CLUB FOR 1919.

THE EXTINCT AND DUBIOUS PLANTS OF BRITAIN,

By G. CLARIDGE DRUCE, LL.D.

Requests have been made to me that a Supplement should be prepared showing what plants have become extinct during the last four centuries and that an account should be given of the somewhat numerous plants which have been wrongly reported as occurring in these Isles or as yet await confirmatory evidence The following account, avowedly imperfect in many details, will, it is hoped, in some way answer this demand and be found useful to such members as are not in proximity to a large botanical library since the records are scattered through many volumes. It may also, perhaps, stimulate a spirit of research among the members which may lead to the discovery of a few of the plants which are treated of in the following pages.

The abbreviations as a rule speak for themselves but it may be stated that *Cyb. Brit.* or *Comp. Cyb.* refers to Watson's *Cybele Britannica* and its *Compendium*, and that Don *Life* refers to the *Life and Work of George Don*, by G. Claridge Druce in *Notes from the Royal Botanic Garden, Edinburgh*, N. xii., 53, 1904. Don *Account* refers to Don's *Account of the Native Plants in the County of Forfar* which is given in full in the preceding work.

Notwithstanding the enormous changes which have gone on in Britain during a period nearly as long as the Roman occupation it is a matter for great congratulation that only about half-a-dozen species have actually ceased to exist and that these are the results of drainage, building operations, and perhaps natural change in the earth's surface. To these might possibly be added *Mentha pratensis*, but the indigenity of this is doubtful, and *Echinophora* and *Frankenia pulverulenta* which are treated in part ii. since they may have been wrongly identified. On the other hand *Elymus geniculatus* might well have been put in the Dubious Plants.

The next fateful years for Britain itself with all the unrest and emotional excitement which the Great War leaves as its aftermath —with every institution and every ancient usage threatened in the laudable desire to benefit everybody and everything but at other people's expense—are not the less fateful for the existence of our more local species. It is greatly to be desired that every power that can possibly be exerted be used to maintain and preserve the existing flora wherever it is threatened without in any way limiting our agricultural output or depriving anyone of his amenities. The native flora is the common possession of the British people and everyone should be educated to regard it as a valuable national asset.

During the period covered by these Notes the British flora has been largely augmented by emigrants from other shores—adventive species brought by varied means. The list would be a very long one and would negative a statement made by that illustrious botanist, Sir Joseph Hooker, that "he knew no example of a plant being completely established in Britain during the century." Examples of such additions to our flora are *Senebiera didyma*, *Lepidium Draba*, *Sisymbrium altissimum*, *Oxalis corniculata*, *O. stricta*, *Trifolium hybridum*, *Veronica Tournefortii*, *Petasites fragrans*, *Senecio squalidus*, *Matricaria suaveolens*, *Hydrilla*, *Elodea*, *Juncus tenuis*, *Spartina alterniflora*, *S. Townsendii* and *Azolla filiculoides*.

PART I.

PLANT EXTINCTIONS SINCE 1597.

693. VICIA LAEVIGATA Sm. *Eng. Bot.* t. 483, 1798.

"*V. hybrida* in pratis et pascuis circa Weymouth in agro Dorsetsiensi."—Huds. *Fl. Ang.* ed. 2, 320, 1778, not of L. "Gathered on the beach at Weymouth by the Rev. Mr Baker in August 1792."—

Sm. *Eng. Bot.* n. 483. "Authentic specimens prove this to be Mr Hudson's *hybrida.*"—Sm. *Eng. Fl.* iii., 286. "About Weymouth, Portland Isle, Chesil Bank, etc."—With. *Nat. Arr.* ed. 7, iii., 846, 1830. "Now extinct."—*Cyb. Brit.* 319. "Ambiguity."—*Comp. Cyb*, 500. "Portland Island, among the shingles near Chesil Bank and even flowering under the stones, some depth, Sir T. G. Cullum : Lodmoor, [specimen ex Pulteney in *Hb. Brit. Mus.* where the locality is more definitely given as 'a little beyond the turnpike gate near the sea shore'] near Weymouth."—Huds. *Bot. Guide* 228, 1805. "I explored all the localities given in the *Botanist's Guide* and in the *English Flora*, a field half-way between Weymouth and Portland Ferry near the sea, without success."—G. S. Gibson in *Phyt.* 737, 1843.

There is no dubiousness about the occurrence of this plant. A specimen exists in *Herb. Smith* in the Linnean Society and also in *Herb. Banks.* As to its grade there seems a possibility that it was a hybrid of *V. lutea* and *V. angustifolia* or a mutant. Close search along the coast may yet be successful in rediscovering it : a most desirable thing as it is unknown elsewhere.

1155. TORDYLIUM MAXIMUM L. *Eng. Bot.* t. 1173.

Formerly about Oxford (where it was probably introduced) : about London, Morison 1672 ; Twickenham, 1837, Isleworth, Middlesex ; near Frilford, Berks. c. 1870 ; near Eton, Bucks, 1805 : Esher, Surrey, 1871 ; Tilbury, Essex, 1877.

An adventive species.

[1220]. KENTRANTHUS CALCITRAPA (L.) Druce. *Eng. Bot.* iv., 234.

Formerly on a wall at Eltham, Kent. There in 1866, H. G. Fox in *Hb. Brit. Mus.* Enfield Palace. E. Forster, 1790 : Chelsea Hospital. 1815, Royen.

Not the smallest right to be considered native.

1392. SENECIO PALUDOSUS L. Marsh Fleabane.

"*Conyza palustris*, in many places about the Fens, as by a great ditch near Streatham Ferry."—Ray *Cat. Cant.* 37, 1660. "Last seen in Cambridge, Wicken Fen, 1857."—Bab. *Journ.* 186. 1897 : near Ely, 1833, last seen 1883, Chatteris ; Padnal Fen, Bennett. Norfolk—Ranworth, Redmore Fen, 1835. Fen now turned into farm lands. Suffolk—Lakenheath. Wangford Fen, 1798, last seen, (!) 1829. "Lincolnshire—near Booth, on the Kesteven side of river Witham."

—Sir J. Banks. "Banks of ditches near Braford water half a mile from Lincoln." (!)—Wollaston in *Bot. Guide* 391, 1805. "Cheshire—by the eastern side of the Dee just above Eaton Boat, sparingly"—Waring in *Bot. Guide* 118, 1805.

A native, and like the following species, destroyed by drainage operations. It may yet reappear in some of the East Anglian Fens. The Cheshire locality was possibly a mistake for *S. sarracenicus.* Specimens from Lincoln and Wicken Fen are in my herbarium.

1405. SENECIO PALUSTRIS Hook. Fl. Am. Bor. i., 334.

Cineraria palustris L. *Othonna palustris* L.

First record: "*Conyza* foliis laciniatis. A stone's march from the east end of Shirley Poole near Rushie moor, belonging to Mr Darcey Washington. In Yorkeshire, Hoary Fleabane, Mr Heaton."—How *Phyt.* 30, 1650. The locality is about two miles from Askern. Sussex—Amberley Wild Brooks, Littleton Brown, about 1725. Suffolk—Crabbe. "In the way you come into Lovingland."—Sherard in *Ray*; Worlingham Common, Belton, 1834; *Bot. Guide* 1805; Geldeston Fen, Woodward; Lackford, Sir T. Cullum, 1774; Wangford, 1800; Brandon, 1800. Norfolk—"In the way from Norwich to Yarmouth a little before you come to Oakley Bridge [Acle?] Sherard in *Dill. Ray* 1724 and *Hb. Brit. Mus.* 1725; wet ditches at Halvergate, Caister-on-Sea, 1781, Winch; Redmore Fen, Marshall; Haddiscoe, 1791; Wroxham Broad, 1854; Potter Heigham, 1833; Ludham, Antingham, Bryant, 1781; Runham, Martham, Stalham, 1875; East Somerton, 1878; Rollesby, 1883, Trimmer; Ormesby, Filby, 1864-94; Flegg Burgh, 1898; Newton St Faiths, 1799; between Hingham and Watton, J. E. Smith; Scoulton, c. 1780, Crowe; Methwold Fen, 1832; Dersingham, 1899, Nicholson *Fl.* 101. Mr Arthur Bennett saw 30 fine specimens in full flower and over 50 that would have flowered the following year. He tells me that a man took away a basketful about 1890. Cambridgeshire—"About March and Chatteris in the Isle of Ely."—Ray *Cat. Cant.* 37, 1660. "In a ditch at the end of the moor near the park at Chippenham, Relhan *Fl.*, last seen 1820. [The West Fen, Ely, Marshall, is an error, Bennett.] Huntingdonshire—Hold Lade near Whittlesea; near Ramsey, *Bot. Guide* 1805. Glamorganshire — About Aberafan, Ray *Itin.* Merionethshire — About Aberafan, Ray *Itin.* Lincolnshire—"East Fen, near Revesby Abbey (!) In some years very abundant, in others very scarce."—Sir J. Banks. Great Stuston, last seen 1820. Yorkshire—Near

Askern, as above, 1650. Lancashire—"In the ditches about Pillin Moss, plentifully."—Ray, 1695. Westmorland—Hildverton Moss; near Burton, Lawson, 1680. The moss was drained in 1777.

This species requires an even greater amount of water than the preceding plant. A biennial species, one of the reasons of its extirpation was the cutting of the fen vegetation. I have spoken to a man who, as a boy, made whistles of the stems as *Angelica* and *Heracleum* are still used.

1756. CENTAURIUM LATIFOLIUM Druce in Ann. Scot. Nat. Hist. 242, 1907. Syme Eng. Bot. vi., 65, 907.

Erythraea latifolia Smith in Eng. Fl. i., 321, 1824, not of Eng. Bot. Suppl. n. 2719 which is a form of *C. umbellatum*. First found in 1803 by Dr Bostock and J. Shepherd. "On sandy ground near the sea near Aisdale [Ainsdale], three miles south of Liverpool." —F. M. Webb. Seaforth Common, 1854, 1874. north of Liverpool, Mr Fisher (!) and Bootle, Lancashire, Mr Bowman, Birkdale, Formby, near Freshfield railway station, 1871-2. My specimens from Fisher are dated 1874.

Mr Arthur Bennett has specimens from the Outer Hebrides of a *Centaurium* with broad leaves and short corolla tube which are worth further study. There is a possibility of *latifolium* being a hybrid.

1907. VERONICA OFFICINALIS L., var. HIRSUTA (Hobk.). *Eng. Bot. Suppl.* t. 2673.

V. hirsuta Hopkirk Fl. Glott. 9, 1813. Hook. Fl. Scotica 6, 1820. *V. setigera* D. Don Descr. Rare Pl. of Scotl. in Mem. Wern. Soc. (4) iii., 297, 1821.

In dry heathy places Carrick, Ayr, Mr James Smith, a very able and intelligent botanist of the Nursery ground, Monkswood Grove, Ayr.

I keep this distinct from the plants mentioned by Williams (*Prod.* 297) from Surrey, Wessex, Norfolk, and Clova. Smith's plant which was brought into cultivation does not seem to have been again gathered in a wild locality. My specimen was sent by Sir W. Hooker to W. Blake. The plant might be refound in very dry sandy districts. A plant somewhat approaching it was sent me from near Edinburgh by Lady Douie in 1918.

2541. SCIRPUS HOLOSCHOENUS L., var ROMANUS (L.).

First record: "*S. romanus*. . . . Habitat in palustribus juxta Throgmorton in agro Worcesterensi."—Rev. D. Sheffield in Huds. *Fl Ang.* 19, 1762. See also Nash *Hist. Worc.* 1781. "Now extinct."—Amphlett and Rea *Fl. Worc.* 379, 1909.

It is scarcely likely that such a distinct looking plant could have been mistaken for anything else, and there is no absolute reason against its being native there. The type occurs on our coasts in three counties and has been reported from four others. The variety has a somewhat different distribution from the type.

2551. ERIOPHORUM ALPINUM L. Sm. *Eng. Bot.* n. 311, 1796. Trans. Linn. Soc. ii., 290, 1794.

"Discovered by Mr Brown and Mr Don in a moss about three miles east of Forfar."—*Trans. Linn. Soc.* ii., 290, 1794. First found by Robt. Brown and G. Don in Aug. 1791, see spec. Now destroyed by dredging for marl and subsequent flooding. "It lingered till 1813."—Arth. Bennett in lit. [? 1790 Teesdale in *Herb. J. Dalton.*] "A specimen of *E. alpinum* exhibited by Dr Balfour said to have been picked by him with Prof. Graham in Aug. 1827 at Durness, Sutherland. It had been put among specimens of *Scirpus caespitosus.*"—*Bot. Soc. of Edin.*, Jan. 10, 1850. See *Bot. Gaz.* ii., 52, 1850. Balfour was then only 19 years of age and evidently did not recognise it at the time and the specimens may have been accidentally mixed. North margin of Gurthambra Lake, three miles west of Mill Street, Co. Cork, H. J. Ryder. 1866, but A. G. More was unsuccessful in a search in 1868 and so was D. Moore in 1869. Baulinamoor, Ireland, Forbes Young in *Hb. Brit. Mus.* (See Syme *Eng. Bot.* x., 71.

The neighbourhood of Blairgowrie or Rannoch Moor are possible places. It is not a high montane plant.

2630. CAREX DAVALLIANA Sm. in Trans. Linn. Soc. v., 266, 1800. *Fl. Brit.* ii., 964, 1084, exclusive of localities.

"Discovered in Mearnshire by Prof. J Beattie, jun.", but his specimens are *dioica* as are all the records prior to 1810. Smith's early descriptions are scarcely tenable and must be cited "sine local." He perhaps had before him Davall's Swiss plant. First British record: "Mr Groult [1807] gathered it on Lansdowne, near Bath, from whence Mr E. Forster communicated a specimen, the ripe fruit only being added from one of Mr Davall's own. Mr Forster informs us it grows on the rise of a hill on which there is a clump of firs about 1¼ miles from Bath. [First made known to me as a British plant by Prof. J. B. Beattie, who found it in Mearnshire. Mr Templeton has found it near Belfast]."—Smith *Eng. Bot.* t. 2123. 1810. The bracketted localities are errors for *C. dioica.* "Bath, 1809. I was lucky enough to find *C. Davalliana* which Dr Smith wanted for *English Botany.* I discovered it at Lansdowne but not in great plenty."—E. Forster *Corresp.* See *Phyt.* ii., 221, 1852. "Lansdowne, Bath, lost by drainage."—*Comp. Cyb.* 588, 1870. By error it has also been recorded for Haddington, Edinburgh, and York. My specimen was sent in 1810 by E. Forster to W. Blake. The latest specimen seems to be that gathered by J. Ward in 1831 (*Herb. Peete* at Dartford). Mr Arth. Bennett says there is a specimen dated 1790 in Rev. J. Dalton's herbarium gathered by J. E. Smith. This may be a foreign specimen or wrongly identified. It may yet be found in bogs on the Cotswolds or Mendips.

2858. ELYMUS GENICULATUS Curtis Obs. Brit. Grasses 46.

In littoribus maritimis. Near Gravesend, Mr Dickson, *l.c.*, and Sm. *Fl. Brit.* 152, 1800. *Eng. Bot.* t. 1586.

? Belgium, ? Holland, S. Sweden, Nyman *Syll.*

"Discovered in marshes near Gravesend by Mr Dickson. Mr Curtis first made it known to the Botanical world as distinct from *arenarius*; our specimen is from the Liverpool Garden."—Sm *Eng. Bot.* t. 1586, 1806. *E. retrofractus* Curt. Found in Norfolk. Hort. Curt. in *Hb. Brit. Mus.* "Incogn. Now known only in gardens. . . . How or where did it really originate? Has it ever been propagated by seeds . . . . or always by division only."—*Cyb. Brit.* iii., 1240" "Extinct."—*Comp. Cyb.* 597. "No doubt there is a well-known garden plant, whose native country is unknown, which was figured by Curtis as his *E. geniculatus*, but I have little doubt that Dickson saw nothing at Gravesend but the leaves of *Triticum pungens*, and distributed the garden plant under the belief that it was the same as he had seen growing wild, as he did with several other species."—Syme *Eng. Bot.* xi., 202. "Cultivated for many years in a garden this grass is little changed though the spikes are not always reflexed." —Sm. *Eng. Fl.* i., 178, 1824. "Probably its disappearance is due to the embankment of the Thames and the consequent drainage of the marshes, but we are not aware when this took place."—*Flora Kent* 420. According to a specimen in *Herb. York*, it was also gathered at

Gravesend by the Rev. J. Dalton, and Syme (*Phyt.* iv., 862, 1852) says A. Irvine pointed out the locality where he had found it about thirty years ago. Thus Syme's criticism is not fair. Dickson could hardly have mistaken the leaves of *Agropyron* for it. Was *Elymus geniculatus* a well-known garden plant when Curtis described it? If so, a garden outcast might well have appeared on the foreshore. This does not seem likely as Curtis would probably have alluded to its being in cultivation. My own suggestion is that it may have been a hybrid of *Agropyron* and *Elymus* which would explain its infertility and its dying out. Whether it originated in Kent or elsewhere is another point. Has it been found on the continent? Nyman omits habitats in the *Consp.*; nor does Lindman include it in the *Svensk Fl.* Mr W. B. Turrill agrees (having the material before him) as to its possible hybrid origin. He tells me there is a specimen in *Herb. Borrer* labelled "Dundee, Dr Hooker," which may be from a garden; and one from the Thames side, Sir J. E. Smith in *Hb. Kew.* *Elymus* is plentiful on that coast and a diligent search should be made for *geniculatus.*

PART II.

THE DUBIOUS PLANTS OF BRITAIN.

This group is made up of plants which have been reported as British. Some were of casual and adventive origin, many were wrongly identified, and some, it is afraid, were wilful impositions, but none have been recently observed except as adventives. The probability is that the majority were really erroneous, but there is a possibility that publishing these records together in an easily consultable form may, by directing attention to them, lead to one or two being rediscovered by our members.

In the following account it has been the aim to give the original record and source together with such comments as have induced the authors of our more recent floras, who have in the main exercised a wise discretion, to omit reference to the great mass of those included here.

19 (2). RANUNCULUS ALPESTRIS L. *Eng. Bot.* t. 2390, 1812.

Pyrenees, Jura, Alps, Carpathians.

"Gathered by Mr G. Don by the sides of little rills, and in other moist places, about two or three rocks on the mountains of Clova, Angusshire."—Smith in *Trans. Linn. Soc.* xii., 343, 1811. The paper was read in 1809. "Mr Don informs us it rarely produces flowers where he observed it, and that the plant itself is not plentiful, being, moreover, so like in foliage to many of its kindred, as to be easily overlooked."—Sm. *Eng. Bot.* t. 2390, 1812. *Eng. Fl.* iii., 49, 1825. "Can the Clova plant be *R. Traunfellneri* Hoppe, a specimen of which from Croatia in my herbarium is well represented by the *E.B.* plate." Bab. *Man.* 6, 1847. "The specimen sent to Smith appears to have been from Don's garden."—Hook. and Arnott *Br. Fl.* ed. 6, 92, 1850. "A specimen from Don in *Herb. Brodie* which is marked 'on rocks near the head of Clova' has the aspect of a wild one, but we still consider it a very doubtful native"—Hook. and Arnott *Br. Fl.* 9, 1855. "Now generally excluded from our flora."—*Comp. Cyb.* 477, 1870. "Probably recorded through mistake."—Bab. *Man.* ed. 7, 10, 1874. "Though these mountains have been carefully examined, this conspicuous plant has been seen by no other collector." —Syme *Eng. Bot.* i., 170. "Incognita. The existence of a specimen in the Smithian herbarium, with a memorandum that it was collected in Forfarshire by Mr George Don, seems very good evidence in favour of its nativity; and yet no other botanist among the many who have searched the mountains of that county has ever detected an example of this species there. Moreover, its geographic distribution otherwise would not much incline us to expect the species in Scotland; since it is not found in Scandinavia, nor any of the arctic lands. At the time when Mr Don was a collector it was not the custom with botanists to be very particular in recording the locality and distribution of plants; and they might not always be sufficiently careful in keeping British and foreign, wild and garden examples of the same species, apart from each other.'—*Cyb Brit.* i., 182, 1847. See Don *Life* 97, 1904.

Don's flowering specimen in *Herb. Smith* is dated April 3, which is very early. Prof. I. B. Balfour says it does not blossom in frames at Edinburgh till May. The plant was sent by Don when he was in full mental vigour. He localises it and speaks of its rarity, its sparse flowering, and of its being a "splendid" plant. The only explanation would seem to be his gathering some species in a flowerless condition, bringing the roots to his garden, and then confusing it with *alpestris* which he might have there, or else that it still awaits rediscovery.

(24). RANUNCULUS GRAMINEUS L.

Portugal, Spain, France, S. Switzerland and Italy.

"From a garden specimen." — *Eng. Bot.* xxxiii., 2306, 1811. "Brought from North Wales by Mr Pritchard."—With. *Nat. Arr.* 505, 1796, and iii., 620, 1812. Repeated in Sm. *Fl. Brit.* ii., 589, 1800 and *Eng. Fl.* iii, 46, 1825. "The Rev. W. W. Newbould informs me there is an unlocalised specimen of this plant in Withering's herbarium, received from Pritchard."—*Comp. Cyb.* 477, 1870. I have been unable to trace it. "Reported from 'the neighbourhood of Llanroost.'"—*Cyb. Brit.* i., 85. "No doubt through mistaking *R. Flammula* for this species."—Syme *Eng. Bot.* i., 86. "Lundy Island, Mr Etheridge of Bristol."—*Phyt.* 120, 1855-56. Never confirmed. Specimens of the narrow-leaved form of *Flammula* are so named in many herbaria, *e.g.*, from Devonshire, Mrs Lightfoot, in *Herb. Druce.*

If it does occur in Britain it would be more likely to be found on the dry hills of Wales and elsewhere. Pritchard's specimen, being correctly named (teste Newbould), limits the question to whether he misreported its occurrence there, not to his having mistaken *Flammula* for it. When in flower it is a conspicuous species.

54. AQUILEGIA ALPINA L.

This has been found by Mr R. H. Corstorphine in Caenlochan Glen, Forfar, possibly from seeds sown there. See *Rep. B.E.C.* 399, 1916. The old records are mistakes arising from a variety of *A. vulgaris* being mistaken for the true *A. alpina.* These are discussed in the same *Report* when the writer named Miller's *A. alpina* as *A. vulgaris* L., var. *Milleriana.* It is to be hoped that some Yorkshire botanist may refind Miller's plant which was first recorded by him as "*Aquilegia montana. magno flore*, C.B. Mountain Columbine with large flowers . . . growing wild in the park of Robert Fenwick, Esq., near Ingleborough Hill, in Yorkshire."—*Abr. Gard. Dict.* i., 1754. "The flowers are much larger than those of the Garden Columbine, and the seeds which I sowed this year in the garden at Chelsea produced the same species without the least variation."—Miller *Gard. Dict.* 1768. In the interim, Hudson *(Fl.*

Ang. 208, 1762) recorded it as "*A. alpina.* In sylvis montosis in comitatu Westmorlandico," giving no reference to Miller. In the second edition, p. 236, he adds "nimis affinis praecedenti, an distincta?" Smith (*Fl. Brit.* ii, 579, 1800) has a var. b. of *vulgaris A. alpina* Huds., which he says "minus luxuriat, nectariis attenuatis, parum incurvis. Omnino distincta ab *A. alpina* L." Withering (*Nat. Arr.* iii., 608, 1812) says Hudson's *A. alpina* . . . mountainous woods of Westmorland [*sic*] is a lesser variety, with the nectary extended, and but little curved inwards." F. Arnold Lees (*Fl. W. Yorks*, 126, 1888) thus sums up the reference to the Yorkshire plant:—"A dwarfed but large flowered form of *A. vulgaris* such as grows in the fissures of the elevated limestone pavements, was intended by this, not the Linnean continental *alpina.*" Another claimant for the name however is made. "Var. b. *A. alpina* Huds. 235, excl. syn. In more mountainous situations At Matlock Bath, Derbyshire. Has scarcely more than one flower on each stem, and the nectaries are rather less curved. The whole plant is less luxuriant and more elegant."—Sm. *Eng. Fl.* iii, 33. 1825.

These early records of *A. alpina* are therefore mere mistakes of identity and refer either to *A. vulgaris* L. or its var. *Millerianu* Druce.

85. Papaver nudicaule L. *Eng. Bot.* t. 2681.

First record: "Found by Professor Giesecke of Dublin. Growing singly among rocks and glens in the hills at Achill Head in the N.W. of Ireland. For the dried specimens which he had the kindness to communicate to us from the native station our present figure is made."—W. J. Hooker in *Eng. Bot.* t. 2681, 1831. See also W. J. Hooker in *Fl. Lond.* under n. 213. "Under a somewhat hasty confidence in the accuracy and scientific caution of a botanist, against all natural probabilities, this arctic species was figured in *English Botany* and duly described in the British Flora as a true native of the west of Ireland. It is now discarded by common consent."—*Cyb. Brit.* i., 106. "An arctic plant, said to have been found by Sir Charles Giesecke. . . . There can be no doubt that it never grew there."—Syme *Eng. Bot.* i., 115.

This appears to have been a gross and not a solitary imposition of the Dublin professor, who also recorded *Ledum palustre* from the same area which he did not see growing but only noticed in a fisherman's hat.

126. RADICULA ANCEPS (DC.). *Nasturtium anceps* Bab., non DC. Prod. i., 137.

England [*sic*], Denmark, Sweden, Finland, Silesia, etc., Nym. *Consp.* 35.

"A common and distinct species."—Babington in *Phyt.* 310, 1842. "Occurs at Berwick-upon-Tweed, Worcester, Newcastle-on-Tyne, etc."—Bab. *Man.* 20, 1847. "*N. patens* Bab. [*sic*] is not the *Sisym. anceps* (Wahl.). See Fries *Herb. Norm.* vi., 18, and is not separable from *N. sylvestre.*"—Bab. *Man.* 20, 1851.

This is therefore merely a mistake of identification. The true *Radicula anceps* (DC.) comb. nov., to which Nyman accords specific rank, may well be found in Britain. Rouy and Fouc. *(Fl. Fr.* ii., 196) treat it as a hybrid of *amphibia* and *terrestris (= Radicula amphibia* × *islandica).* The leaves are broad, large, obovate, incise-dentate or lyrate-pinnatifid, the lobes dentate or denticulate, the terminal larger, all more or less auriculate at the base; petals longer than the calyx; silicles elliptic, nearly twice as long as the style and three or four times shorter than the pedicel.

146 *b*. CARDAMINE BELLIDIFOLIA L. *Eng. Bot.* t. 2355, from a continental specimen.

Norway, Sweden, Finland, Iceland, etc., Nym. *Consp.* 37.

"*Cardamine pumila Bellidis folio, Alpina* Ger. Emac. 260. . . . found by Mr Newton on St Vincent's Rock, near Bristol [? *Arabis scabra*]. On the rock by the quarry by Bath [? *A. hirsuta*]: in variis locis juxta Rippon ad monasterium ejus et in Denbighshire."—Merrett *Pinax.* Ray *Syn.* 300, n. 5, 1724. "*C. bellidifolia* [localities given above repeated]."—Huds. *Fl. Ang.* 255, 1762. "St Vincent's Rock." --With. *Nat. Arr.* ii., 413, 1776. Stokes (With. *Nat. Arr.* ii., 685, 1787) cites the localities given by Merrett and Ray, but adds :—"Mr Curtis in his *Cat.* very justly doubts its being native. . . . Dr Broughton, in a letter dated November 15, 1783, informs me that, having repeatedly searched for it in company with Mr Ford on St. Vincent's Rocks. . . . but in vain, he was persuaded that either the *Turritis hirsuta* or *Arabis stricta* of Hudson, both of which grew there in profusion, had been mistaken for it." Withering says he had wild specimens gathered in Scotland from Mr Milne [formerly curator of the Oxford Garden]."—Sm. *Eng. Fl.* iii., 187. "*Turritis hirsuta* now grows in places near Denbigh where the *Cardamine* was said to grow. . . . The specimens before me were gathered wild in Scotland and sent me by Mr Milne. Of these being genuine there can be no doubt."—With. *Nat. Arr.* iii., 714, 1812, and *l.c.* 767, 1830. "The only authority for this plant is Withering, in whose herbarium two examples of it are preserved, said to be from Scotland. The other stations recorded for it have been by mistaking *Arabis stricta* or *hirsuta*, and *Cochlearia alpina* for *Cardamine bellidifolia*, as shown by the Sloane Herbarium, etc."—Syme *Eng. Bot.* i., 224. "Reported on old authority from the counties of Somerset, Denbigh, and York, but since this species cannot be found in any of the alleged localities, while *Arabis hirsuta* does occur in most or all of them, there can be little question that the *Arabis* was mistaken for the *Cardamine*."—*Cyb. Brit.* i., 140. "Confounded with a form of *Cardamine hirsuta* [*sic*]."—Hook. *Stud. Fl.* 529.

231. CARRICHTERA ANNUA (L.) Prantl in Nat. Pflanz. iii., 2, 173, 1891. *C. Vella* DC. *Vella annua* L. *Eng. Bot.* t. 1442, from a foreign specimen.

Portugal, Spain, Sardinia, Sicily, Greece, Nym. *Consp.* 58.

"*Nasturtium sylvestre Erucae affinis* C.B. Eruca Nasturtio cognato tenuifolia."—Ger. *Herb.* 247. "Found by Mr Lawson on Salisbury Plain not far from Stonehenge."—Ray *Syn.* 117, 1690. "*Vella annua.*"—With. *Nat. Arr.* i., 392, 1776; ed. 5, iii., 697, etc. "We have heard of its being gathered [Salisbury Plain] at a more recent period."—*Eng. Bot.* n. 1442. "I have never heard of its being met with since."—Sm. *Eng. Fl.* iii., 156. "Neithrop, not uncommon."—Gulliver *List of Banbury Plants* [Error]. "Richmond, Surrey, 1846, perfectly naturalised, A. W. MacIvor, ex *Herb. E. Edwards.*"—*Comp. Cyb.* 482, 1870; *Cyb. Brit.* i., 136. "Evidently originated from the siftings and sweepings of corn from the Distillery, situate at the water side, Wandsworth."—A. Irvine in *Flora of Surrey* 314, 1863.

It is probable that the Salisbury Plain plant was *Reseda lutea*, that plant representing it (teste Newbould) in *Herb. Sloane*. That, too, is Gulliver's Neithrop plant. The figure of *Vella* in Gerard's *Herbal* is not unlike *Reseda*. True *Carrichtera annua* occurs as a casual from time to time in many localities, but is not permanent.

245. LEPIDIUM HIRTUM emend. DC. Syst. ii., 536, 1821.

Thlaspi hirtum Mont. Cambrobr. Ray. (siliculis hirtis) Smith *Comp.* 93, 1800 and *Fl. Brit.* ii., 685. *Thlaspi hirtum*, Perthshire,

W. Miller, 1800. Sm. *Eng. Bot.* n. 1803, 1807, fruit only. Smith (*Eng. Fl.* iii., 167, 1825) confuses the true *hirtum* (with hairy pouch) and *Smithii*; his synonyms too are mixed, belonging to both species.

All the records of *L. hirtum* for Britain, save one, are errors for *L. Smithii* Hook., the exception being Miller's Perthshire specimen which was sent by Mackay to Smith. George Don first clearly showed that there were two species confused by Smith with *hirtum*. Don *Account* 221. True *L. hirtum* is not likely to be found native in Britain as it is limited to the south of France and Corsica.

255 (2). Hutchinsia alpina [Br.] in Ait. Hort. Kew. ed. 2, iv., 82.

Spain, Pyrenees, Alps, Juras, Apennines, Carpathians, Nym. *Consp.* 65.

First evidence: Two specimens in a collection of British plants, apparently the one bequeathed to Sir J. E. Smith in 1805 by Mr Arthur Bruce, of Ballochmyle, Ayrshire. They are labelled—"*Lepidium petraeum*, Ingleborrow, Mr M'R. [itchie]," and seem to have been gathered late in the eighteenth century. See note by the Rev. W. W. Newbould in Seeman *Journ. Bot.* i., 359, 1863. "Ambiguity."—*Comp. Cyb.* 481. 1870.

287 (2). Helianthemum ledifolium Miller Gard. Dict. 1768. *Eng. Bot.* t. 2414, 1812.

Spain, Portugal, S. France, S. Italy, Nym. *Consp.* 73.

First recorded as *Cistus salicifolius*. "In pratis et pascuis arenosis juxta Brean Down in Agr. Somersetiensi."—Huds. *Fl. Ang.* ed. 2, 233, 1778. "Petals yellow, smaller than the empalement. . . . nr. Brean Down."—With. ed. 2, 558, 1787. "*Cistus ledifolius.* Brent Down. . . . Mr Dickson and the late Mr Lightfoot communicated to me specimens raised from seed gathered by themselves at the place which determined the species to be *ledifolius* not *salicifolius* for which it was taken by its discoverer, Mr Hudson." *Eng. Bot.* under t. 2414, 1812. See also Sm. *Eng. Fl.* iii., 24, 1825. "*H. ledifolium* Willd. Incog. Hudson records it. . . . from near Brean Down, but possibly some error has occurred between this and *polifolium*. The Rev. J. C. Collins has sought the alleged locality year after year unsuccessfully." — *Cyb Brit.* i., 172. "The record of *H. ledifolium* in *Phyt.* 48, 1848, was a clerical error for *polifolium*." —*Comp. Cyb.* 486. "Doubtless introduced into the British flora through an error as to the species observed."—Syme *Eng. Bot.* ii., 235, and Bab *Man.* 42, 1904. "It is generally supposed that Hudson mistook *polifolium* for it."—Hook. and Arnott *Br. Fl.* 45, 1850. "Not found for many years."—Bab. *Man* 34, 1847. "Erroneously recorded in old books."—White *Fl. Bristol* 169.

It is quite possible that the hybrid of *polifolium* × *Chamaecistus* was the plant mistaken for *ledifolium* (*cf.* With., *l.c.*).

288. HELIANTHEMUM TOMENTOSUM S. F. Gray Nat. Arr. ii., 663. *Eng. Bot.* t. 2208.

Recorded as *Cistus tomentosus* Scop. "This has been communicated several times to us and to others by Mr G. Don from Scotland, and Mr Dickson has likewise gathered it there. Everybody considers that it is very different from [*H. Chamaecistus*], and indeed it proves to be Scopoli's *C. tomentosus*, of which we have an authentic specimen."—Sm. *Eng. Bot. l.c.* "On the Scotch mountains, G. Don." Sm. *Eng. Fl.* 27, 1825. "When cultivated together the difference [of this and *Chamaecistus*] is striking. What such practical observers as Scopoli, G. Don, and our most acute, justly lamented Dickson have asserted, I would not hastily reject, nor can I, with my worthy friend, Prof. Hooker, think *C. tomentosus* not even a well marked variety. It merits at least some examination in its native places of growth."—Sm. *Eng. Fl.* iii., 27, 1825. "Scarcely separable even as a variety."—Syme *Eng. Bot* ii, 11: Bab. *Man.* 42, 1904.

Included in the *British Plant List* as a variety. The only dubiety here is as to the grade. Cultural experiments are needed to discover if the characters attributed to it are genetic.

Var. SURREJANUM. *Eng Bot.* t. 2207. Ray *Syn.* 341, 1724.

H. Surrejanum Miller Gard. Dict. 1769, based on *H. vulgare petalis florum perangustis.* Dill. *Hort. Elth.* 177, t. 145, 1732. Discovered by Mr E. Du Bois at Croydon. Found there also by Mr Christy. "Is a garden variety or monstrosity."—Syme *Eng. Bot.* ii., 11. See also note by C. E. Salmon in *Gard. Chron.* 1918.

There is no doubt as to the occurrence of the plant in Britain. The question is to refind it, and to ascertain whether it is a variety or monstrosity of the Common Rock-rose.

291. VIOLA STRICTA Hornemann Hort. Hafn. ii., 958.

Sweden, Denmark, Germany, Austria, etc., Nym. *Consp.* 77.

"In peaty ground in Garryland Wood, near Gort, gathered by Mr A. G. More."—*Bot. Soc. Edin.* 1851. "I regret that Mr Polwhele has been in such haste to record the occurrence of *Viola stricta* in the fens. I believe the plant will not prove distinct from *V. stagnina*, and, moreover, I believe that the Irish plant will turn out to be the same."—Babington in *Phyt.* 649, 1852. "Error."—*Comp. Cyb.* 487.

The record is a mistake. The plant seen was either *V. stagnina* or a hybrid of it with *canina*, perhaps the plant recorded as *V. montana* L. in *British Violets*; in any case it is not the *V. stricta* Hornem.

301. VIOLA BIFLORA. (?)

"A violet with roundish, kidney-shaped leaves and yellow flowers was found on the wolds near North Dalton [Yorkshire] in the spring of 1834 by Mr Fenton of Londresbo."—Baines *Flora Yorks* 15. See *Comp. Cyb.* 486.

Requires refinding. It may have been only a form of *V. palustris* and is not likely to be the very distinct *V. biflora* of the mountainous parts of Europe, N. Asia, and America.

315. FRANKENIA PULVERULENTA L. *Eng. Bot.* t. 2222, from a garden specimen.

Portugal, Spain, S. France, Italy, Dalmatia, Greece, Nym. *Consp.* 85.

"Alsine maritima supina, foliis Chamaesices Inst. R.H. App. 665. Anthyllis maritima, Chamaecisae similia C.B. Pin. 282. Valentina. Clus. H. clxxxvi. Found on the coast of Sussex and sent by Mr Brower [Brewer]. Forte Tithymali marini species minima ex Cornubia Merr. Pin."—Dillenius in Ray *Syn.* 352, 1724. "Found on the coast of Sussex and sent by Mr Brewer."—Ray *Syn.* "In littore Sussexiae inter Bognor et Brightelmston inveni."—Huds. *Fl. Ang.* 138, 1778. "Marshes on the sea coast."—With. *Nat Arr.* i., 198, 1787. "Of late years we have no certain account of its having been observed there, nor has it been seen elsewhere in Britain. Our specimen came from Mr Dickson's garden." — *Eng. Bot.* t. 2322. "Nobody [since Hudson] has since found it, and we make certain that it would not have escaped Mr Borrer's eyes, if still existent on the coast between Bognor and Brighton."—*Cyb. Brit.* i., 187. See also Syme *Eng. Bot.* ii., 43 and *Comp. Cyb* 488. "Formerly [*sic*] on the Sussex coast, now lost."—Bab. *Man.* 48, 1904. According to Watson (*Comp. Cyb.* 488) there is a specimen in *Brit. Herb. Linn. Soc.*, fide D. Oliver, but I am unable to find it. Not in the *Winch Herb.* at Newcastle-on-Tyne. The specimen in *Herb. Dill.* is *Polycarpon tetraphyllum* (!), and in connection with this must be taken the suggestion of Dillenius referring to Merrett's Cornish plant. Brewer was a frequent correspondent of and contributor of plants to Dillenius. The record then simply rests on Hudson's statement which has never been confirmed.

345. SILENE RUPESTRIS L.

Scandinavia, Vosges, Pyrenees, Spain, France, Italy, etc., Nym. *Consp.* 92.

"The Rev. A. W. Donaldson, Strathaven, has this plant growing in his rockery. He told me he is confident he picked it during his holidays in the highlands of Scotland some years ago, he thinks in Glen Spean, and probably near Loch Gulbin. Not being a botanist he took no special notice of the locality at the time. He regarded it as a nice plant for his rockery."—Dr Craig in *Trans. Bot. Soc. Edin.* xvii., pt. 2, 1888, ex Mr Arth. Bennett.

This plant might well grow in Scotland, but despite its small flowers it is a conspicuous species and is scarcely likely to have been overlooked unless limited to one or two localities. The recent discovery of *Arabis alpina*, a more conspicuous species, makes it well for members to bear this in mind.

346. SILENE ALPESTRIS Jacq. Fl. Austr. i., 60, t. 96.

Heliosperma alpestre Reichb.

Austria, Styria, Carinthia, Tyrol, etc., Nym. *Consp.* 87.

"A specimen gathered by the late Mr G. Don 'on a rock on a mountain to the east of Clova, Angusshire' is in Mr Borrer's herbarium."—Bab. *Man.* 45, 1847. Omitted from the *Manual* in later editions. See Gardiner *Fl. Forf.* 27; *Cyb. Brit.* i., 203; *Comp. Cyb.* 490. "Certainly from a garden."—Hook. and Arnott *Br. Fl.* 59, 1850. See Syme *Eng. Bot.* ii., 134; Don *Life* 100. "One of Don's reputed discoveries."—Hook. *Stud. Fl.* 475, 1870.

Its geographical distribution renders its occurrence in Britain most unlikely. The specimen (in *Herb. Brodie*) is labelled in Don's writing "*Silene*, supposed *alpestre*, on rocks on mountains to the east of Clova. I discovered this several years ago but mislaid the specimens, and only found them lately," which suggests a trick of memory, not a wilful imposition.

357. CUCUBALUS BACCIFER L. Syme *Eng. Bot.* ii., 54, t. 198.

All Europe save ! Belgium, ! Britain, Scandinavia, N. Russia, Greece, Nym. *Consp.* 81.

"*Cucubalus Plinii* Lugd. 1429. In sepibus Insulae Monae collegit et mecum communicavit D. Fowlkes de Lhanbeder prope Ruthin: D. Richardson in Ray *Syn.* ed. 3, 267, 1724. Mr Foulkes only received an account of the *Cucubalus* 'from one who pretended to know plants very well,' but that he could never find it." See Linn. *Corresp.* ii., 171. There is little doubt that this early record was an error. "Collected in the August of 1837 in "the Isle of Dogs. . . . on the banks of the ditch on the left-hand of the road from Blackwall to the Ferry House; and there, if not truly indigenous, it is at least perfectly naturalised. I also feel convinced that I have met with it in similar situations in other parts of England; but the plant, not being in flower, I have passed it, as I did the first time I saw it in the Isle of Dogs, thinking it to be merely *Cerastium aquaticum*, which in that state it much resembles. George Luxford A.L.S."—*Phyt.* i., 255. See also *Minutes of the Linn. Soc.* Nov. 21, 1837. "In considerable abundance there in 1852."—*Phyt.* iv., 605.

There is no dubiousness about this record; the plant existed there up to 1853. There is, however, something dubious as to the grade of citizenship attributed to it in our Floras. All have treated its occurrence in the Isle of Dogs as adventive. Considering its recent discovery in Norfolk by our member, Mr F. Robinson (*Rep. B.E.C.*, 127, 1914 and 188, 1915), it may well be that in each case the plant came by natural means (? bird-sown). In both cases the localities are similar to those in which it grows on the mainland of Europe, and its geographical distribution is entirely in favour of its being a British plant. This, too, was the opinion of the authors of the *Flora of Middlesex.* See p. 50, 1869.

357 (2). Cucubalus viscosus With. Nat. Arr. i., 261, 1776, and Huds. Fl. Ang. 186, 1778, based on *Lychnis major noctiflora dubrensis perennis* Ray *Syn.* 340.

This is an error of identification, referring to the Dover Catchfly, which, in the *Flora of Kent* 55, is placed to *Silene nutans.* It is a question whether both *S. nutans* and *S. dubia* Herb. occur in Kent. The latter is the common shingle plant.

366 (2). Cerastium tomentosum L.

Italy, Dalmatia, Montenegro, Serbia, Herzegovina, Greece, Nym. *Consp.* 107.

"Ripton Wood, Hunts. Specimen gathered in Mr Whiterock's garden, who assured me that it was the individual plant he had found in Ripton Wood where he had found it growing wild."—Mr Woodward in Stokes *With. Nat. Arr.* i., 481, 1787. Redditch, Worcester, Don in *Herb. Druce* (!).

The plant may have occurred as an escape although not at all likely to be native in Britain. It is a frequent garden plant and has now become established in a few places in Britain as well as in France, Belgium, &c.

383 (2). STELLARIA SCAPIGERA Willd. *Eng. Bot.* t. 1269, 1804.

"Sides of rivulets on the mountains of Badenoch, between Loch Ereachd (Ericht) and Loch Laggan; and by the side of a rivulet on a mountain to the eastwards of Loch Nevis, Invernesshire."—Don *Herb. Brit.* No. 10, 1804. "Wild specimens of this new and curious *Stellaria* have been obligingly communicated to us by Mr G. Don, who gathered them at different times of the year 1794 to 1803. . . . The plant was received by the younger Linnaeus from the Kew garden . . . but its native country was altogether unknown till Mr Don's fortunate discovery."—Sm. *Eng. Bot.* t. 1269. *Eng. Fl.* ii., 304. "*S. graminea*, var. *scapigera* Hook. and Arnott. The locality is between Dalwhinnie Inn and the Old Kirk of Laggan . . . this is however of little consequence as we now believe that plant to exist nowhere in a wild state, but to be a mere cultivated form of *S. graminea.* Don cultivated it extensively in his garden at Forfar, from which we have specimens. It was originally described by Willdenow from a plant in the Berlin gardens . . . but it is not even conjectured to have come from Scotland, and has not been found anywhere else."—Hook. and Arnott *Br. Fl.* 69, 1850. "It is increased by division, but not by seed, although seed is produced sometimes freely. In the Glasgow Botanic Garden . . . *S. graminea* [springs] up in the vicinity of pots in which *scapigera* [has been] cultivated."—*l.c.* ed. vii., 70. "*S. scapigera* . . . is apparently a monstrosity of *S. graminea*, and probably from Don's garden; some plant he met with being mistaken by him for the same as the one he had in cultivation."—Syme *Eng. Bot.* ii., 99. "Incognit."—*Cyb. Brit.* i., 225. "Ambiguity."—*Comp. Cyb.* 492. "No wild specimens are known. I can scarcely believe that this is a state of *graminea.*"—Bab. *Man.* 54, 1856. "There need be little doubt that Don found it in the wild state and brought it to his garden

. . . *S. scapigera* is, I believe, a monstrous condition of *S. graminea*, but it must have originated somewhere, and quite as likely on a highland moor as in a lowland garden."—Don *Life* 102.

A plant, whatever may be its grade, which is quite likely to be found. It may be a rare mutant. Don repeatedly alludes to it in his correspondence. *Life* 257, 263, 290. He says it is truly rare. The specimen in Lady Aylesford's collection appears a cultivated one. Her painting of it, dated 1804, was from a plant sent her by Dickson.

394 (2). ARENARIA FASTIGIATA Sm. Eng. Bot. t. 1744, 1807.

France, Germany, Switzerland, E. Europe.

A fasciculata Jacquin (not of L.) Fl. Austr. ii., 49, t. 182. *Alsine fastigiata* Bab. *Alsine Jacquini* Koch Syn Fl. Germ. ed. 2, 135, 1842. See Hook. *Fl. Scotica* 138 ; Sm. *Comp.* 70 ; Don *Life* 100.

First record : "It is several years since I first observed this plant . . . [in] Clova, but very rare, . . . I have likewise found it on some rocks in Fifeshire, but rare. My specimens are from Clova."—Don *Herb. Brit.* No. 136, 1806. "Mr George Don had the good fortune to discover this new British plant on rocks in the mountains of Clova, Angusshire and also in Fifeshire."—Sm. *l.c.*; *Eng. Fl.* ii., 310. "Clova specimens . . . we possess from Drummond as well as Don."—Hook. and Arnott *Br. Fl.* 66. "Incognit." — *Cyb. Brit.* 220. "Error? Dr Arnott intimated in the British Flora that he was in possession of Clova specimens from Drummond. Drummond may have got them from Don or from Don's garden."—*Comp. Cyb.* 491. "Though it has been found by no botanist at present living, it would scarcely be proper to omit it from the list of British plants. I have one of Don's specimens ; this has no particles of mica adhering to the roots, as most frequently happens with plants gathered on the Clova mountains, where it purports to have been gathered."—Syme *Eng. Bot.* ii., 114, 5.

The only corroboration for its occurrence in Britain is Drummond who succeeded to Don's garden at Forfar, whence his specimens may have been gathered. Its rediscovery would be of great importance in establishing Don's bona fides. His statement is unambiguous and made at a period of his life when his memory was accurate. My specimen from Lady Aylesford, which she painted in 1812, is labelled "Mountains west of Clova, Don." The roots are quite free from soil.

396. ARENARIA LARICIFOLIA Huds. Fl. Ang. 168, 1762, not of L.

"In montibus Westmorlandicis passim." — Hudson, *l.c.* On mountains."—With. *Bot. Arr.* 257, 1776. "Upon Castle Hill, near Forfar, in the county of Angus."—Lightfoot *Fl. Scotica* ii., 232.

A misnomer for *Arenaria verna* L.

[398]. BUFFONIA TENUIFOLIA L. *Eng. Bot.* t. 1313, 1804.

S. France, Spain, Portugal, Nym. *Consp.* 120.

"*Alsine polygonoides tenuifolia flosculis ad longitudinem caulis velut in spicam dispositis.* In maritimis circa Bostoniam agri Lincoln." —Plukenet *Phyt.* t. 75, f. 3, 1691. Ray *Syn.* 210, 1696. Hounslow Heath, Doody, in Dill. *Ray Syn.* 346, 1724. "Sir J. Banks suspects that *Bupleurum tenuissimum* was mistaken for it."—Sm. *Eng. Bot.* n. 471 and 1313, 1804. "Yet Plukenet and Dillenius certainly knew [it] perfectly, and the original specimen in the Brit. Mus. is right."—Sm. *Eng. Fl.* i., 226, 1824. See *Bot. Guide* 387, 1805. "Little doubt that a mistake had been made in both instances."—Syme *Eng. Bot.* ii., 134. "We found it on Hounslow Heath where Mr Doody observed it."—Milne and Gordon *Indig. Fl.* 199, 1793. Trimen and Dyer (*Fl. Middlesex* 52) suggest that Doody "accidentally wrote his note of the locality against the wrong species," and they think "that Milne and Gordon may have mistaken a late grown form of *Juncus bufonius* for it." An unlocalised specimen represents it in *Herb. Dill.* [See *Dill. Herb.* 106].

If it ever occurred it must have been as an adventive species.

404. SAGINA BOYDII Buch.-White in Trans. Bot. Soc. Edin. xvii., 32-5, 1887. *S. Linnaei*, var. *Boydii* Williams Mon. in Rep. B.E.C. 202, 1917.

Supposed to have been found in Braemar in 1878 by Mr W. B. Boyd. He does not remember gathering it, but he found it in his potting shed among other specimens he brought back from Braemar, and his impression is that he had gathered it on Ben A'an. But he had received about that time living plants from Switzerland for his garden, and there is the chance that it may have a foreign origin. In later years his memory rather crystallized upon Ben A'an; directly after his reporting it he was less certain. The plant is known from nowhere else. It does not perfect seed, but is propagated by cuttings. In order to check my remembrance of the details of its occurrence as given me by Mr Boyd (I had many talks with him about it as I was anxious to re-find it), my remarks were submitted to Prof. I. B.

Balfour, who kindly tells me that Mr Boyd in the early nineties on seeing his plant of *Boydii* at Edinburgh said—" I have no recollection of getting that plant. I believe it to be a Braemar plant, but when I was arranging for planting my Braemar collections I had also in hand some Swiss plants, and it may have been one of them." As Professor Balfour says:—" There is nothing in it—whether it be species or otherwise—to forbid its being a British plant; nothing in it to say nay to a continental origin. Re-finding is what is to be aimed at."

407 (2). SAGINA MARITIMA, var. ALPINA Syme Eng. Bot. ii., 117.

" Prov. 16. Summit of Ben Nevis; G. Don. Apparently not found by any living botanist, and the summit of Ben Nevis is almost destitute of phaenogamous plants."—*Comp. Cyb.* 490. " Top of Ben Nevis, Don."—Hook. *Stud. Fl.* 61, 1870 [as a variety of sub-sp. *S. maritima*]. " Don seems to have found it on Ben Nevis."—Bab. *Man.* ed. vii., 53. " Doubtless Don found this plant on Ben Nevis in 1794, for, as Mr Watson elsewhere asserts that with Don the 'summit of mountains' means 'declivities many feet below,' the fact that the summit of Ben Nevis is almost destitute of phaenogamous plants does not disprove Don's assertion. It was my good luck in company with Mr E. Robertson of Burnside, Forfar, to find a *Sagina* in the upper part of Corrie Sneachda, and on the high rocks between the head of Loch A'an and Ben Macdhui, which Mr Arth. Bennett says he cannot keep apart from Don's plant."—Don *Life* 101.

My specimen of Don's which is labelled " *S. maritima*, from summit of Ben Nevis, in 1794," belonged to the Countess of Aylesford. The leaves are bluntish, not mucronate, and rather broad. One specimen has the capsule longer than the sepals. There are particles of mica and quartz about the roots. They are different from any forms of *S. maritima* from Forfarshire, where I have gathered it in four stations, and are nearer specimens from the Caithness Coast. Dr Williams (*Mon. Sagina* in *Rep. B. E. C.* 193, 1917) removes my Glen A'an specimen (*Ann. Scot. Nat. Hist.* 273, 1894) from *maritima* to *procumbens* as f. *Druceana*, to which or more probably to *scotica* it may belong. I have repeatedly searched the upper plateau of Ben Nevis above 4,000 feet but failed to find any form of *maritima*, but I have not ascended the hill from the upper portion of Glen Nevis nor have I ever been able to find the *Poa* which Mackay and Don gathered on that hill. Dr. Williams, *l.c.*, puts Don's plant as var. *stricta* Clavaud of *S. maritima.* David Don said his father found it still on Ben Nevis in 1803 (see *Herb. Smith*). Fries says his *S. stricta* occurs on mountains in Norway. See Bab. *Man.* ed. 9, p. 58.

410 (2). SPERGULA PENTANDRA L.

"*S. annua semine foliaceo nigro circulo membranaceo cincto.* In Hibernia locis arenosis observavit, Dr G. Sherard."—Dill. in Ray *Syn.* 351, 1724. This record is put under *Spergula pentandra* in Huds. *Fl. Ang.* 177, 1762 and reduced to var. *pentandra* of *S. arvensis* in Huds. *l.c.* ed. 2, 1778. In *Eng. Bot.* n. 1536, 1805, although the name *S. pentandra* is attached to the plate, the figure is *S. arvensis* L. Babington describes *S. pentandra* "said to have been found in Ireland" (*Man.* 40, 1843). *S. pentandra* is "said to have been gathered in Ireland by Sherrard [*sic*]; but the Rev. W. W. Newbould is inclined to think (from the reference in the old Herbarium) [whose?] that the plant under that name was really one of the pentandrous *Spergulariae*."—Syme *Eng. Bot.* ii., 134 This opinion appears to have been adopted by Babington, ed. vii., 62, who says it was probably *Lepigonum neglectum*, by Moore and More (*Cybele Hibernica* 109), and Hooker (*Stud. Fl.* 530). All these suggestions were discussed in a paper the writer contributed to the *Annals of Botany* iv., 378. It may be added that the specimen in the Dillenian Herbarium at Oxford representing the plant described 351 n. 8 in Ray's *Synopsis* is *S. pentandra* L.; that it is labelled "collect. G. Sherard"; that it is preserved on the original numbered sheet; that it is in the sheet of the Dillenian Herbarium corresponding to his pagination of the *Synopsis*; that the number on it agrees with the especial paragraph where the plant is aptly described; that we know Sherard visited several parts of Ireland including Drogheda and the Mourne Mountains; and that he was in constant communication with Dillenius. The *Synopsis* was brought out under his watchful supervision, and it really is rather ridiculous to suggest that such eminent botanists as Dillenius, the authority for at least one genus of the Caryophyllaceae, or Sherard were likely to have confused plants so dissimilar as a *Spergula* and *Spergularia*, and the discovery of authentic specimens at once disproves it. There is no dubiousness as to the identification of the species. We are less fortunate in being able to fix the habitat of this unlocalised specimen. There is no reason to doubt that Sherard found it, and probably in Ireland, but where, and whether native or casual, we are unable to say.

429. HYPERICUM BARBATUM Jacquin Fl. Austr. iii., 33. Sm. *Eng. Bot.* t. 1986, 1809.

"By the side of a hedge near the wood of Aberdalgy, in Strathearn, Perthshire, but sparingly. Mr G. Don." —*Eng. Bot.* t. 1986, 1809, and *Eng. Fl.* iii., 329. "No other botanist having met with examples, we cannot suppose this easily seen species to have been either native or naturalised in the one locality; and in which it is now probably extinct."— *Cyb. Brit.* 254. "We do not believe that this species was ever found wild in Scotland."—Hook. and Arnott *Br. Fl.* 81, 1850. "No one has found it since; and if it ever occurred there it was doubtless an escape from cultivation. . . . Syme *Eng. Bot.* ii., 160. See Don *Life* 103.

There is a specimen in Lady Aylesford's collection labelled "in hedges near the wood of Aberdalgy," where Don no doubt found it as an adventive plant. Smith was to blame for inserting it in *English Botany* without expressing that fact, a carelessness followed by Hooker (*Flora Scotica* 272) where its locality is amplified to "Woods," and by Smith (*Eng. Fl.* iii., 328) to "bushy places in Scotland." It may be added that Don sent fresh specimens to Smith, which were used for the plate, and that on a specimen of *Glechoma* he says he found it near where the *Hypericum* grew.

579. MEDICAGO MURICATA All. Fl. Pedem. i., 316.

"*Trifolium cochleatum, modiolis spinosis.* At Orford, Suffolk, on sea-banks, plentifully."—Ray *Syn.* 197, 1696. Pluk. *Phyt.* t. 113, f. 6. "I have seen no native specimens and have doubts concerning this species, which I hope further enquiry may remove."—Sm. *Eng. Fl.* iii., 320, 1825. "The Rev. W. W. Newbould informs me that Ray's plant was *M. denticulata*, on the faith of specimens in the old Herbaria."—Syme *Eng. Bot.* iii., 112. "I have omitted *M. muricata*, being convinced from personal observation that no such plant now exists on the seabank at Orford."—Bab. *Man.* 71. *Comp. Cyb.* 498.

If it ever occurred there, which is unlikely, it was an alien of casual occurrence.

631. TRIFOLIUM PARVIFLORUM Ehrh. Beitr. vii., 165, 1792.

Spain, Germany, Bohemia, E. Europe, Nym. *Consp.* 179.

"Under the name of *T. maritimum* from near Kilbarrack Church, Co. Dublin, Dr Mackay. Mr A. G. More identifies it as above. As, however, it is likely to be a casual introduction, it is considered best for the present to exclude it."—Syme *Eng. Bot.* iii., 113.

Alien, and, as such, has been found occasionally in Britain.

[880]. RUBUS ARCTICUS L. Sm. *Eng. Bot.* n. 1585, 1806.

Scotland [*sic*], Norway, Sweden, Finland, N. Russia, Nym. *Consp.* 222.

"The late Rev. Dr Walker, Professor of Natural History at Edinburgh, informs me in the year 1782 of his having gathered this beautiful plant in rocky mountainous parts of the Isle of Mull. Mr Sowerby has been favoured by Richard Cotton, Esq., with dry wild specimens from the high regions of Ben y Glo, Blair, in Scotland, which agree with that in our plate, procured from the choice garden of the Right Hon. Charles Greville."—Sm. *Eng. Bot.* n. 1585, 1806. "A specimen, too imperfect to decide, by J. Robertson, from head of Glen Tilt."—*Bot. Soc. Edin.* Nov. 11, 1841. See *Phyt.* 136, 1841. "Ben More, in the Isle of Mull, and on Ben y Glo, Perthshire: but recent search has failed to discover it. Mr Watson had a specimen which was said to have been gathered on a moor in Yorkshire, but he had reason to believe that the specimen was of garden origin. It appeared in the garden of the late Mr J. Irvine Boswell, Kingcausie, near Aberdeen, on a bank of peat mould brought from the neighbourhood in preparation for a rhododendron bed; but careful search failed to detect it growing on the spot whence the mould was brought, and after a few years the plant died out in the garden. It is not an unlikely plant to occur: the most probable place for it is the district near the Sow of Atholl."—Syme *Eng. Bot.* iii., 261. *Cyb. Brit.* i., 350. "Error."—*Comp. Cyb.* 501.

May the dwarf alpine one-flowered form of *Geum rivale* have been mistaken for it?

886. FRAGARIA VESCA L., var. ATROVIRENS Lindl. in Eng. Bot. Suppl. n. 2742. 1832. *F. calycina* Lindley Syn. 96, not of Loiseleur. See Wallis *Hist. Northumb.* i., 145.

"In the bottom of the wood at the ostium of Gostonburn. On the strand of the brook at Slatefield, by the path to Simon-burn."—L. Lindley in *Eng. Bot. Suppl.* n. 2742, 1832.

Leaflets sessile, hairy, roundish, wedge-shaped, coarsely toothed. Peduncles longer than scapes. Calyx as large as corolla. This should be sought for.

887. DRYAS PENTAPETALA Lightf. Fl. Scot. 275, 1777.

"*Caryophyllata Pentaphyllea* Ger. *alpina quinquefolia* in the Den of Bethaick and elsewhere."—Sibbald *Scot. Ill.* 15, 1684. "The *Dryas pentapetala* mentioned by Sibbald as growing in the Den of Bethaick, four miles from Perth, is not to be found there; possibly *Potentilla argentea* was mistaken for it."—Lightfoot, *l.c.*

No allusion is made to it in the *Flora of Perthshire.* Doubtless an error, possibly for the hybrid, *Geum intermedium. D. pentapetala* L. is *Geum anemonoides.*

896. POTENTILLA INTERMEDIA L.

P. opaca Sm. Eng. Bot. n. 2449, 1812.

"I discovered this plant some years ago on the mountains of Angusshire to the West of Clova. I likewise observed what I take to be the same plant on rocks opposite Dundee, in April, 1786."—G. Don *Herb. Brit.* n. 165. "Mr Donn of Cambridge. . . . has received from Scotland the true *opaca.*"—Sm. *Eng. Bot.* t. 2449. "Said to have been found on the hills of Clova. . . . as well as in Perthshire."—Sm. *Eng. Fl.* ii., 421. "Hills of Clova and Braes of Balquhidder, G. Don. . . . not again found."—*Cyb. Brit.* i., 345; *Comp. Cyb.* 501. David Don says he saw the specimens brought home fresh by his father, and he is responsible for the locality of the Braes of Balquhidder. See D. Don *Mem. Wern. Soc.* iii., 305, 1821. See also Syme *Eng. Bot.* iii., 260, where "sea shore opposite Dundee" is added on Don's authority.

My specimen from Lady Aylesford's Herbarium from Don is labelled "Rocks to the west of Clova" and is *P. intermedia* L., "petalis paulo majoribus quam in typo," teste Th. Wolf, 1913. This is (Nym. *Consp.* 225) a northern species of Russia and Finland and adventive in Sweden and Prussia, but I have it as an adventive species from Dundee. *P. thuringiaca* Bernh. (*P. Nestleri* Tratt. = *P. intermedia* Nestl., non L.) has been found in Forfarshire by Mr R. H. Corstorphine but adventive, and some of Don's specimens may belong to it. Hudson's *P. opaca* was *verna,* teste Sm. *Eng. Bot.* t. 2449.

904. POTENTILLA ALBA L. Sm. *Eng. Bot.* t. 1384, 1804, from a garden specimen.

Pyrenees, France, Germany, Switzerland, N. Italy, Austria, etc., Nym. *Consp.* 227.

"*Quinquefolium album majus* Bauh. Pin. 325. *Q. sylvaticum majus flore albo* Gerard 987. Habitat in Wallia. D. Haviland."—Huds. *Fl. Ang.* 197, 1762. "The leaves grow by fives, approaching at the ends, serrated. Stems thread-shaped, trailing. Receptacle rough with hair."—With. *Nat. Arr.* i., 308, 1776. "In Wales, according to Mr Haviland (in Hudson), not observed by any other person."—Sm. *Eng. Fl.* ii., 423.

Not verified by recent observation. Probably *P. Fragariastrum* was mistaken for it. See *Cyb. Brit.* i., 347.

906 (2). POTENTILLA TRIDENTATA Ait. Hort. Kew. ed. i., ii., 216. Sm. *Eng. Bot.* n. 2389, 1812.

"Justly reckoned by Mr Don among the most beautiful of its genus, was gathered [by him] on a mountain called Werron in Angusshire."—Smith in *Trans. Linn. Soc.* x., 343, 1811. "This wild specimen was gathered on a mountain called Werron . . . by Mr Don, the only person who, to our knowledge, has observed [it] in Britain."—Sm. *Eng. Fl.* ii., 425. Hook. *Fl. Scotica* 163. "On mountains to the eastwards of Clova I discovered the beautiful *Potentilla* new to the British Flora."—Don. See *Life*. "Said to have been found by Mr G. Don on Werron Hill and East Rocks, Loch Brandy, Clova; but no doubt *Sibbaldia* has been mistaken for this American plant."—Syme *Eng. Bot.* iii., 260 and Bab. *Man.* ed 7, 103. "There is even a specimen in Smith's herbarium labelled as though actually collected on . . . Werron . . . by Don, dated April 3, 1809." — *Cyb. Brit.* i., 348, iii., 418; *Comp. Cyb.* 501. Gardiner (*Fl. Forf.* 61) says Werron "has since been searched by Mr Kerr and a party from Montrose, but without success. It may, however, have occurred only in one spot; and such a spot may elude again and again the keenest researches of the mountain rambler. An authentic specimen, gathered by Don, is in Mr Kerr's herbarium; and another in . . . Mr Douglas Gardiner's, which had been given to him by Don, as they were intimate friends." Don repeatedly alludes to it in his letters and in his *Account*. See *Life* 209. 290. His flowering specimen, sent to Lady Aylesford, has particles of mica on its root and is labelled "Mountain of Werron." There is another record which also awaits confirmation. *P. tridentata* was stated to have been discovered several years ago on Ben Wyvis by Westwood of Dollar (*Bot. Soc. Edin.* Jan. 10, 1850), and a dried specimen was exhibited at the same Society on March 14, 1850 as part of a plant picked by Mr Westwood of the Botanical Garden, Dollar, and Mr C. Stewart on Ben Wyvis, Rosshire, about ten years ago. See *Bot. Gaz.* 52 and 133, 1850. Mr M'Nab promised to investigate the Ben Wyvis habitat but nothing seems to have transpired.

Don's statement is quite precise It is curious that April 3, 1809 should have been the date when both this and *Ranunculus alpestris* were sent to Smith. Were they from the garden to which he had transported roots of what he thought were these species when he collected them out of flower? The example of *Alchemilla argentea*, however, still encourages one to hope for its rediscovery.

920 (2). SANGUISORBA MEDIA Sm. Eng. Fl. i., 219, not of L.

"In pastures, in the west of Scotland, Mr G. Don. Taller and larger than the foregoing, with a much longer and truly cylindric spike of rather paler flowers. Mr Don, who sent it, had scarcely an idea of its being more than a variety [of *S. officinalis*?], yet it is certainly the plant of the authors above quoted [Linnaeus, Willdenow, Aiton, etc.], and is found wild in Siberia as well as in Canada."—Smith *l.c.* "I have a specimen from G. Don of his [*sic*] *Sanguisorba media*. It is not the American species, but merely, I think, *S. officinalis* with a longer head than usual, such as I have found repeatedly in the Lake district."—H. C. Watson in *Bot. Gaz.* ii., 94, 1850. "Said to have been found by Mr George Don in the West of Scotland ; but doubtless erroneously, as it is an American plant not occurring at all in Europe."—Syme *Eng. Bot.* iii., 260.

A misnomer of Sir J. E. Smith. A look-out should be kept for this form, which may prove to be a *variety* of the type.

944. ROSA POMIFERA Herrm., var. DICKSONIANA (Lindley Syn. Brit. 99).

R. Dicksoni Lindley in Eng. Bot. Suppl. n. 2707 and Trans. Hort. Soc. vii., 224.

"Said to have been found in Ireland by J. Drummond, but probably sent from the Cork Botanic Garden."—*Cyb. Hib.* 486. Syme *Eng. Bot.* iii., 261. Lindley *Syn.* 99, 1841.

950. ROSA RUBELLA Smith Eng. Bot. t. 2521.

"Found on the Durham coast by Mr Winch."—Syme *Eng. Bot.* iii., 204. Near Newcastle, Herb. Sowerby, N. J. Winch, 1823.

"Banks of the Dee about Abergeldy."—Hook. and Arnott *Br. Fl.* 129, 1850. Near Gateshead, near the Forty Bridge, Wolley-Dod, who refers it to *R. pimpinellifolia* × *alpina*.

This is dubious only as to its correct grade, but it may be extinct. Red-flowered forms of *R. spinosissima* have been confused with it.

981. SAXIFRAGA PEDATIFIDA Ehrh. ex Sm. in Trans. Linn. Soc. x., 340. *Eng. Bot.* t. 2278.

"Mr G. Don and the late Mr Mackay both gathered this plant in the Highlands, the former on the mountains of Clova, Angusshire. Our figure is unavoidably taken from a garden specimen."—*Eng. Bot.* t. 2278. "Said to have been found by Mr Don on rocks by the head of Clova; also reported to have been gathered in the Isle of Achill, by Mr J. Wynne: but there seems to be no satisfactory evidence of the latter being the true plant."—Syme *Eng. Bot.* iv., 87. "'Don does not pretend to have found it, but sends a garden specimen, saying he has heard it has been found in Scotland.' Boswell Syme letter."—*Comp. Cyb.* 518. Don's specimen sent in 1812 to Lady Aylesford is certainly the garden plant, *S. trifurcata* Schrader, and could never have been wild on the Clova mountains. "Achill Island." —Hook. *Stud. Fl.* 531, but the plants are also *S. trifurcata*. "Achill Island, Wynne."—Bab. *Man.* 129, 1847: Andrews 1853, ex Alf. W. Bennett in *Rep. B.E.C.* 72, 1882. Cf. *Journ. Bot.* 151, 1883. The specimen thought to be collected there was the "form *S. ceratophylla* Aiton, distinguished by its rosettes of somewhat rigid leaves," which is most unlikely to have been found in Ireland, having only a very limited distribution in the south of France. Mr T. H. Corry (*l.c.* 181) expressed his utmost disbelief in Andrews' specimens, which were known in many cases to have come from his garden.

As *pedatifida* we, therefore, have had recorded the common garden *trifurcata* representing the supposed wild specimens from Scotland and the equally dubious native, or rather the almost certainly hortal, *S. pedatifida* var. *ceratophylla* (Ait.) from Achill Island, Ireland.

981. SAXIFRAGA ELONGELLA Sm. Eng. Bot. t. 2277 and Trans. Linn. Soc. x., 340.

"On a rock by a river called Lintrathen, 1½ miles north of Airly Castle, Mr G. Don."—Sm. *Eng. Bot. l.c.* Sm. *Eng. Fl.* ii., 279. See also *Account* 208.

The specimen in the Countess of Aylesford's Herbarium is very scrappy. It seems to be a small form of *S. hypnoides*.

Don's *S. tectoria* from roofs of houses in Kirriemuir, Forfarshire, is *S. platypetala* Sm., as is his *S. pulchella* from Clova.

981. SAXIFRAGA MUSCOIDES Don in Trans. Linn. Soc. xiii., 437. Sm. *Eng. Fl.* ii., 272, 1824.

"? *S. caespitosa* in montibus supra Ambleside in com. Westmorlandico."—Huds. *Fl. Ang.* 158, 1762. *S. moschata* Sm. Fl. Brit. ii., 455, 1800. *Eng. Bot.* n. 2314, 1811. With. *Nat. Arr.* ii., 406, 1796, not of Wulf.

"Ambleside, Hudson, confirmed by specimens sent from thence, Mr D. Don. Cultivated in Kew Garden in 1781 as the true plant of Hudson."—Sm. *Eng. Fl.* 272, 1824. "Whether the plant found by Hudson on mountains above Ambleside (*S. caespitosa* [Huds. non L.] which spot we have examined in vain) be the *moschata*, as Withering supposed or not, we are now authorised in admitting this curious species as a British native, Mr Don [Donn] of Cambridge, having given us specimens from his garden, the parent roots of which he received from the Highlands of Scotland."—Sm. *Eng. Bot.* t. 2314. "Incognita. Probably some variety of *hypnoides* was thus named." —*Cyb. Brit.* i., 415. "Error."—*Comp. Cyb.* 517. Syme *Eng. Bot.* iv., 87. "One of Don's reputed discoveries, and reported from Westmorland by Hudson."—Hook. *Stud. Fl.* 531.

The only reference to such a plant by Don is in his *Account* 208, where he records "*Saxifraga*, nova species, which I believe to be the *S. muscoides* of Willdenow." Probably the correct statement would be that a form of the aggregate *S. hypnoides* L. from the hills above Ambleside was mistaken by Hudson for *S. caespitosa* and that a specimen from the Clova mountains was thought by Don to be *S. muscoides* Willd. Close attention to this extremely varied and puzzling group is asked for.

992. SAXIFRAGA COTYLEDON L.

Scandinavia, Lapland, Iceland, Pyrenees, Alps, Nym. *Consp.* 267.

"Mr Wright has seen another Saxifrage, allied to *S. Aizoon*, wild on rocks at Crossthwaite, Westmorland, for which he showed me as the same species, *S. Cotyledon*, planted on a wall by Troutbeck Bridge. We visited each of these places in vain."—Borrer in *Phyt.*, vol. ii., 429, 1846. *Cyb. Brit.* i., 405. "Error, perhaps more truly an imposition."—*Comp. Cyb.* 517.

An imposition.

992. SAXIFRAGA ROTUNDIFOLIA L.

Alps, Central and Eastern Europe, Nym. *Consp.* 275.

"Was found a few years ago among the rocks in the vale of Newlands (Cumberland), but has since been searched for in vain."—G. S. Gibson in *Phyt.* vol. ii., 376. 1846. "Error."—*Comp. Cyb.* 517.

Planted or alien.

993 (3). SAXIFRAGA ANDREWSII Harvey in Lond. Journ. Bot. vii., 571, t. 19, 1848, and admitted to the *Bot. Soc. Lond. Cat.* ed. 3, 1850.

"Said to have been found at the head of Glen Curragh, Kerry, by Dr. W. Andrews, and there is a leaf in Mr Hewett Watson's herbarium sent by Dr. Andrews amongst a number of leaves to illustrate the variations in form of *S. umbrosa* in Ireland."—Syme *Eng. Bot.* iv., 71, t. 549; *Cyb. Hib.* 116. "Glen Caragh, Kerry, 1853, Andrews."—*Rep. B.E.C.* 72, 1882. "Stated by Andrews to have been gathered on damp cliffs in a gully near the head of Glen Caragh. He removed roots of the then flowerless plant to his garden, where after a lapse of nearly three years it produced flowers in June 1848."—Scully *Flora Kerry* 106.

As the plant is a hybrid of one of the *Aizoon* group with *umbrosa* it is most likely that some transposition of labels took place in Mr Andrews' garden. He also is the sole authority for *Carlina racemosa*. See also his mistake under *Saxifraga pedatifida*.

1008. COTYLEDON LUTEA Huds. Fl. Ang. 194, 1778. *Eng. Bot.* t. 1522, 1805, from a Chelsea garden specimen.

Spain, Italy, Dalmatia, Greece, etc.

"In muris et saxosis humidiusculis, in occidentali parte comitatus Eboracensis, D. Tofield in horto D. Clement, qui recepit ex agro Somersetsiensi."—Huds. *l.c.* 194. "Our knowledge of this fine plant as growing in Britain is entirely owing to Mr Hudson. Plants communicated by Mr Hudson from Somerset to Chelsea Garden. From one of these our figure was taken."—Sm. *Eng. Bot.* 1522, 1805. "Said to have been found in the West Riding of Yorkshire by Tofield; and Mr Hudson says he saw it himself in Mr Clement's garden, to which it was alleged to have been brought from Somersetshire. No doubt the first was an error for *C. Umbilicus*, and the second a mistake as to the place from whence the garden plant had been obtained. Rev. W. W. Newbould informs me that there is no specimen of *C. lutea* in Tofield's herbarium."—Syme *Eng. Bot.* iv., 63. "Error."—*Comp. Cyb.* 517. Ashtead Park wall near Epsom. Vide *Hist. Epsom* app. 1824, cited in *Phyt.* 713, 1843. "Blackdown Hill, three miles from Wellington, Somerset, ex G. S. Gibson."—*Phyt. l.c.*

Hortal or error. Immature *Umbilicus* bears a superficial resemblance to *lutea.*

1011 (2). SEDUM ANOPETALUM DC. Rapp. Voy. ii., 80

Native of South France, S. Switzerland, Dalmatia, Hungary, Greece, etc., Nym. *Consp.* 261.

"A *Sedum* sent to Mr H. C. Watson by Mr Borrer as *S. elegans* from Jersey appears to belong to this species; but the plant is now dead, and only a dried specimen remains. Possibly there may have been some mistake about the locality of this, as Mr Borrer mentions (*Phyt.* v., 47, 1854) that he had what he believed to be *S. anopetalum* from Devonshire, and that the Jersey *Sedum* was different."—Syme *Eng. Bot.* iv., 63. Borrer (*l.c.*) alluding to the Devon plant says that it has narrow, upright, pale yellow petals and gray leaves remarkably imbricated in rows.

Possibly this is *S. reflexum*, var. *albescens.*

1046 (2). EPILOBIUM DODONAEI Vill. Prosp. 45. Syme *Eng. Bot.* t. 494. *E. rosmarinifolia* Haenke in Jacq. Coll. ii., 50. *E. angustissimum* Curt.

Iceland, Scotland (rare), Central and West Germany, etc., Nym. *Consp.* 246.

"On almost inaccessible rocks that overhang the Tarf, a mountain stream in Glen Tilt. . . . It may be readily overlooked from the frequent nibbling of sheep and other animals. . . . It has also been observed in one or two situations by the Tay, where doubtless it has been carried . . . by the impetuosity of the mountain torrents. John Robertson. We possess specimens . . . said to be collected in Glen Tilt by Mr Robertson; if this be verified."—Hook. and Arnott *Br. Fl.* 144, 1855. "I have only seen a few fragmentary specimens . . . in Borrer's herbarium."—Syme *Eng. Bot.* iv., 7. "Error?"—*Comp. Cyb.* 512. "Probably a mistake, a small alpine form of *E. angustifolium* being taken for it."—Bab. *Man.* 145, 1904. "There is another suggested locality which has been overlooked. *E. angustissimum.* Rocks near Twl Du in Cwm Idwal. I have subjoined a mark of doubt as to this plant, having never found it in flower, but I have been informed by my friend, Dr. Smith, that *E. angustissimum* grows in similar situations abroad. This note may be productive of further investigation. . . . I think it very likely to prove *angustissimum*. This is the *angustifolium* of Bingley's tour which he mentions to grow on the rocks of Hysva Bengam . . . which are in fact the upper part of Cwm Idwal close to Twl Du."—Griffith in *Bot. Guide* i., 82. 1805. The habitat is not mentioned for either species in the *Flora of Carnarvonshire*.

Doubtless the above are forms of *E. angustifolium*, not *Dodonaei*, which, although so named by Villars from the figure in the *Pemptades*, had previously done duty in Lobelius' *Stirpium* p. 326.

1051. Epilobium collinum Gmel. Fl. Badensis iv., 265, 1826. *E. montanum*, sub-sp. *collinum* Nyman *Consp.* 248.

Almost the whole of Europe, Iceland, Greenland, Rouy & Fouc. *Fl. Fr.* vii., 190.

First record: Druce in *Scot. Nat.* 330, 1887. Two sheets of "*E. roseum* ? to be examined. Scotland. Dr. Power." in the Herbarium of the Holmesdale Nat. Hist. Club Mus. at Reigate. See C. E. Salmon in *Journ. Bot.* 110. 1904, where he identifies them as *collinum*. My own specimen was gathered in 1876 in Strath Tay and was sent with others to Prof. Haussknecht, the author of the Monograph on *Epilobium*. He named it *E. collinum*. To my eyes it looks only *E. montanum*, forma *minor*, nor have several subsequent visits to the district afforded *collinum*. At present, therefore, its occurrence in Britain is dubious, but it may quite well be found in Perth, Forfar, or the lowlands of Scotland, and in northern England, Derbyshire, or Wales.

1085. Echinophora spinosa L. Sm. *Eng. Bot.* t. 2413, 1812, from an exotic specimen.

Lancashire (now extinct). France, Spain, Italy, Dalmatia, Albania, Greece (rare), Nym. *Consp.* 261.

"*Crithmum Spinosum*. Thornie Samphire. Neere the Sea upon the sands, and Bayche between Whitstable and the Isle of Thanet, by Sandwich, and by the sea neere Westchester."—Gerard *Herbal* 533-4, 1633. Below Faversham. Merrett *Pinax* 31, 1666. *Crithmum* *spinosum* Ger. Prickly Sampire or Sea Parsnep. Observed by Mr Lawson at Roosbeek in Low-Fourneis, Lancashire."—Ray *Syn.* 72, 1690. "*Echinophora maritima spinosa.*—Prickly Sampire or Sea Parsnep. On the Sea-Beach in the way from Feversham to Sea-Salter." — [Bateman] *Cat. Fevers.* Blackstone *Specimen Botanicum* 18, 1746. "Near Weymouth, on the Chesil Beach, between the Ferry and Portland; and on the cliff between Weymouth and Landsford Castle, Aug. 1837."—Rev. A. Bloxam in Baxter *Phaen. Bot.*, under t. 478, 1842. "On the shores at Sandside near Ulverston, and near Winder Hall, Cartmell."—Aiton in Topling's *Sketch of Furness and Cartmell.* Dillwyn unsuccessfully searched for it in the Kentish localities. See *Bot. Guide* 1805. "Nobody can meet with it now." —Sm. *Eng. Bot.* n. 2413, 1812. "Extinct, casual?"—*Comp. Cyb.* 518. "Incog."—*Cyb. Brit.* i., 464. "Lanc. and Kent, sed nunc extincta."—Nym. *Consp.* 299. "Reported from Dorset, etc., not confirmed."—Hook. *Stud. Fl.* 531, 1884. "This [Kentish] evidence is too strong to be set aside altogether; it is, however, quite certain that the plant has been extinct in both stations for a long time past. We suspect that it was introduced with ballast from southern Europe, as it does not grow wild north of the Gironde."—*Fl. Kent.* 160, 1899.

The Rev. A. Bloxam mistook *Crithmum maritimum* for it, and this is not unlikely the case in other instances, since the shingle form differs somewhat from the cliff plant. Its continental distribution, south and west France, Spain, Italy, etc., would render its occurrence on the south and south-west coasts not improbable.

1096. APINELLA KITAIBELII (Bieb.).

Native of the extreme east of Europe, extending westwards to Vienna.

"*Trinia Kitaibelii* Bieb. The late Mr J. Woods believed he had a specimen of this species from Uphill, Somerset; but probably he mistook *T. vulgaris* [*Apinella glauca*] for it."—Syme *Eng. Bot.* iv., 179

Unlikely to be native, or even to have occurred in Britain.

1117. CHAEROPHYLLUM AROMATICUM L. *Eng. Bot. Suppl.* t. 2636, 1830.

E. Europe, reaching to West Prussia.

"I discovered this in 1810, by the side of the river called Lunan and Vennie, not far from Guthrie, in a truly wild state, G. Don."—Gard. *Fl. Forf.* 85. See Don *Account* 219. "Near Guthrie, about seven miles east of Forfar, near the margin of the road leading from Forfar to Arbroath, G. Don."—See D. Don in *Trans. Wern. Soc.* iii., 300, 1821. "Error."—*Cyb. Brit.* i., 463; *Comp. Cyb.* 520. David Don said he saw it growing there.

Not an error. Don found it, but as an adventive species, and it is now extinct in that locality, which has been repeatedly searched by myself and others. There is a specimen in Lady Aylesford's Herbarium from Lunan, Don, from which she made her painting of the plant, and one from Vennie, Don, in *Hb. Druce.*

1130 (2). FOENICULUM PIPERITUM Sweet.

Portugal, Spain, France, and S. Europe.

"*F. piperitum* Tenore. St Aubin's Bay, Jersey, Rev. W. W. Newbould."—Bab. *Man.* ed. 2, 142, 1847. Babington, in his third edition, 141, 1851, rather begs the question by saying he puts *F. piperitum* under *officinale*, and in the fourth edition omits all reference to it. He is doubtless quite correct in putting the Jersey plant to *officinale*, since it was doubtless only a form of that species which Newbould saw.

True *F. piperitum* Sweet has occurred as an alien at Bristol. It is not likely to be native in the Channel Isles.

1155 (2). TORDYLIUM OFFICINALE L. Sm. *Eng. Bot.* t. 2440, 1812, from an exotic specimen.

S. Italy and South Eastern Europe.

"Found by Mr Doody about Thistleworth."—Ray *Syn.* 206. "About London, Petiver *Hort. Brit.* t. 24, f. 6. In arvis rarius, dubia civis."—Sm. *Fl. Brit.* i., 295, 1800. Smith has misinterpreted both records which refer to the adventive *T. maximum.* See *Fl. Middlesex* 132. "Incogn."—*Cyb. Brit.* i., 454. "Essex, Rev. S. Palmer. Error."—*Comp. Cyb.* 520. "Confounded with *T. maximum.*"—Hook. *Stud. Fl.* 531. The Essex locality, recorded by the Rev. S. Palmer, was "In a field by the lane leading from Thoydon to Loughton."—Loud. *Mag. N. H.* ii., 285, 1829, but Palmer was not a critical botanist and probably mistook it.

1194. GALIUM CINEREUM All. Fl. Pedem. i., t. 77. *Eng. Bot. Suppl.* n. 2783, 1834.

G. diffusum D. Don ex Hook. Fl. Scotica 52, 1821.

S. Spain, France, Italy, etc., Nym. *Consp.* 325.

"Near Kinnaird, Angusshire."—G. Don. In his *Account* he says it is near *G. austriacum* Jacq. "On the banks of the river Leith, near Slateford, three miles from Edinburgh, G. Don."—Smith in *E.B. Suppl.* t. 2783, 1834, figured from a dried specimen. "I have a wild specimen from the late George Don, sent as a new species, exactly agreeing with the specimen of *G. cinereum* DC. sent by M. Thouin."—Sm. *Eng. Fl.* i., 203, 1824. Retained as a distinct species by Syme (*Eng. Bot.* iv., 215, t. 648 bis) as *G. diffusum* D. Don, "found only by G. Don."

This plant is put as a variety of *G. erectum* Huds. in the *British Plant List*, n. 1194. There is no doubt about Don's finding it. The grade of citizenship is dubious. It is almost certainly adventive.

1194. GALIUM ARISTATUM Sm. Eng. Fl. i., 203, 1824. *Eng. Bot. Suppl.* t. 2784, 1834.

G. aristatum L., teste Sm. "In Angusshire but not common, Mr G. Don."—Sm. *l.c.* "This new addition to our Flora, sent by the late Mr Don as *G. erectum*, is undoubtedly the original *G. aristatum* described by Linnaeus."—Sm. *Eng. Fl.* i., 203, 1824. "Probably a state of *erectum*."—Bab. *Man.* ed. 7, 170. As a synonym of *G. erectum* in Hook. *Stud. Fl.* 178, 1870. "Evidently one of the intermediate forms which connect the two sub-species."—Syme *Eng. Bot.* iv., 217, t. 649 bis. See *Comp. Cyb.* 522.

Don was correct in putting it to *erectum*. Smith erroneously identified it with the Linnean species. It will probably reward the careful searcher.

1200. GALIUM VALANTIA Web. ap. Wigg. Prim. Fl. Holsat. 13, 1780.

G. saccharatum All. Fl. Pedem. i., 9, 1785. *G. verrucosum* Sm. Eng. Bot. t. 2173, 1810. *G. tricorne* Don Herb. Brit. n. 103, not of Stokes.

First record: "*G. tricorne.* In cornfields, but rare. I have observed it in the Carse of Gowrie. It has likewise been observed in cornfields near Malton, in Yorkshire, by . . . Mr R. Miller."—Don *Herb. Brit.* fasc. v., n. 103, 1806. "*G. verrucosum* . . . Carse of Gowrie . . . Don."—Sm. *Eng. Bot.* n. 2173, 1810. "Probably introduced with seed-corn."—Hook. and Arnott *Br. Fl.* ed. 7, 198. "Mr Borrer writes that his 'specimen from G. Don is like that figured in *Eng. Bot.* as *G. verrucosum*.' And as that figure appears to have been taken from a true example of *G. saccharatum*, it would seem that the species had been really found in Britain; though if so, it was doubtless as a casual introduction only."—*Cyb. Brit.* iii., 449: ii., 19; *Comp. Cyb.* 522. See Syme *Eng. Bot.* iv., 232.

Not dubious, but an adventive species. The Yorkshire plant may have been *G. tricorne*.

1203. GALIUM SPURIUM L. Sm. *Eng. Bot.* n. 1871, 1808.

Scotland, England, Scandinavia, Germany, Belgium, France, Switzerland, Italy, Tyrol, Austria, etc., Nym. *Consp.* 330.

"I first observed this plant in 1784, in cornfields near the village of Redditch in Worcestershire. I next observed it in 1801, in cornfields near the village called Loch-head, about two miles from Forfar, but not common. Dr. Smith . . . found that my plants agreed in every respect with the Linnean specimen."—Don *Herb. Brit.* n. 104, 1806. See also Sm. *Eng. Bot.* under t. 1641, 1806; Gardiner *Fl. Forf.* 93; Hook. *Fl. Scotica* 52; *Cyb. Brit.* ii, 20. "Casual."—*Comp. Cyb.* 522. "It was probably an accidental straggler."—Syme *Eng. Bot.* iv., 232.

The Warwickshire record in Bab. *Man* ed. 9, 186 is an error. It should be Worcestershire. *G. spurium* Huds. Fl. Ang. 57 is *tricorne*. *G. spurium* is given by Nyman (*Consp.* 330) as a native of Scotland (r.) and England, but under this he also includes *G. Vaillantii* DC. Lady Aylesford's specimen is labelled "Cornfields about Forfar, G. Don."

1212. ASPERULA NITIDA Sibth. & Sm. Fl. Graec. Prod. i., 89.

"Between 3000 and 4000 feet on Ben Nevis as a tiny patch of a very dwarf-growing plant. A part of this root was brought to a rock-garden in Kent. It flowered next year, and was named at Kew as *A. nitida*."—K. E. Styan in *Selborne Mag.* 153, 1914.

This species of Greece or Asia Minor must have been either intentionally planted on Ben Nevis or the specimen may have been confused with another in the rock-garden. I kept a special look-out for it in August last but saw neither that or anything like it. Error, and scarcely worth wasting space upon.

1260. ERIGERON UNIFLORUS L. Sm. *Eng. Bot.* t. 2416, 1812.

Iceland, Lapland, Scandinavia, Pyrenees, Alps, Tyrol, etc.

"Gathered on Ben Lawers, as well as on rocks by the river Almond, near Lindoch [Lynedoch], seven miles from Perth, by Mr G.

Don, who justly distinguished this species from *E. alpinum*, with which even Linnaeus at one time confounded it."—Sm. *l.c.* See also *Trans. Linn. Soc.* x., 346, 1811, and *Eng. Fl.* iii., 423. "Error, a misnomer of *E. alpinus*, single-headed."—*Comp. Cyb.* 533.

Yes, a single-headed state of *E. alpinus* L. = *E. borealis* (Simmons). The true *uniflorus* has not yet been found in Britain. Don sent his plant as a form or new species, and it was Smith, not Don, who misnamed it. The above plate is combined with *Eng. Bot.* plate t. 464 in the plate of 775 Syme *Eng. Bot.* The two plants are not identical, and are worth further study. Lady Aylesford's plant from Ben Lawers from Don is the ordinary form of that mountain.

1270. ANTENNARIA DIOICA Gaertn., var. HYPERBOREA DC. Prod. vi., 270, 1837.

A. hyperborea D. Don. *Eng. Bot. Suppl.* t. 2640, 1830.

"Found by Mackay on dry rocky ground on Little Breeze Hill, Skye, Sep. 1, 1794."—*Eng. Bot. Suppl. l.c.* There is an excellent specimen from Isle of Skye, Don, in Lady Aylesford's Herbarium. It was refound on the Cuchullins by Dr Tyacke about 1840. See specimen in *Hb. Druce*.

It is therefore scarcely dubious, but it is worth rediscovering.

1332. ACHILLEA DECOLORANS Schrad. in Willd. Enum. Hort. Berol. 913.

A. serrata Sm. *Eng. Bot.* t. 2531, 1813.

On the road to Mr Selby's house near the turnpike house, Matlock, Derbyshire, 1802. "Incogn. Reported from Somerset (Flower); Derby (Rupp in *Eng. Bot.*); York (Mann in *Bot. Soc. Edin.*)."—*Cyb. Brit.*, suggested by Watson (*l.c.*) to have been either garden plants or yellowish-flowered *Ptarmica*. Nyman remarks "olim Angliae indicata (*A. serrata* Sm.), ibi tantum culta occurrit."—*Consp.* 367. Linton (*Fl. Derbyshire* 182) cites the Matlock locality from *Phyt.* 383, 1861 [*sic*]. See Garry *Notes* 101; Syme *Eng. Bot.* v., 59, t. 729; *Comp. Cyb.* 535.

Doubtless the plant occurred there as a garden straggler, now extinct.

1343. ANTHEMIS ANGLICA Sprengel Syst. iii., 344.

Chamaemelum maritimum latifolium ramosissimum flore albo. Dill.

Ray Syn. 186, 1724. *Angliae nostra alumna est* Pluk. Alm. 97. *A. maritima* Sm. Eng. Bot. t. 2370, 1812, not of L. *A. arvensis*, var. *anglica* (Sprengel).

"Mr Robson favoured us with a wild specimen from Sunderland, Durham, and our figure has been assisted by one from a garden."—Smith, *l.c.* Winch (*Bot. Guide* 256, 1805) says this Sunderland habitat is an error of Mr Robson's. "The specimen in *Herb. Sowerby*, apparently used for figure, is *Matricaria inodora* L."—Garry *Notes* 100 "Incogn. Something has been reported under the names of *A. maritima* and *anglica* from Sussex, Glamorgan, Pembroke, Durham, Kirkcudbright, and the N.E. of Scotland. It is probable that these are mostly *Pyrethrum maritimum*. Babington however considers a plant found at Sunderland by Mr J. Backhouse in 1844 to be the *A. maritima* of Sm., corresponding with the *A. anglica* of Sprengel and very different from the *A. maritima* L."—*Cyb. Brit.* ii., 129 (condensed). "Probably a maritime form of *A. arvensis*. Sunderland. Not recently found."—Bab. *Man.* 208, 1904. "Leaves fleshy, pinnatifid, pinnules deeply serrate, receptacle flat. Formerly found in Durham."—Hook. *Stud. Fl.* 212. "*A. maritima*. Fields by the sea."—Robson *Brit. Fl.* 167, 1777. Williams (*Prod.* 28) does not consider the characters sufficiently marked to be considered perhaps even as a variety. "With *A. anglica* I am unacquainted except from the specimens in the Smithian Herbarium, where there are two wild specimens from Sunderland and a cultivated one from Mr Robson's garden, the latter scarcely differing from the normal state of *A. arvensis*."—Syme *Eng. Bot.* v., 52. There is said to be a specimen from Burrowstowness, Scotland, in *Herb. Brit. Mus.* 1766. The Dunboy Quay, Berehaven, *A. anglica* proved to be *Anacyclus radiatus*. *A. anglica* Sprengel is referred to *A. arvensis* by Nyman (*Consp.* 361.) What is Plukenet's plant?

1373. ARTEMISIA CAERULESCENS L. Sm. *Eng. Bot.* t. 2426, 1812, from a garden specimen.

"In littoribus maritimis, prope Boston in comitatu Lincolniensi, D. Tofield."—Huds. *Fl. Ang.* 359, 1778, who cites Gerard *Emac.* p. 1104 for it. "No other person has met with it, and the late Sir Joseph Banks repeatedly searched the neighbourhood of Boston in vain. In the Isle of Wight, Gerard, but it has not been found by recent botanists."—Sm. *Eng. Fl.* iii., 410, 1825. "Not found for many years."—Bab. *Man.* 175, 1847 [a profoundly true remark]. "Incogn. Said to have been found at Portsmouth, Boston and Isle of Wight, but probably all three erroneous."—*Cyb Brit.* ii., 99. "Coast of Brading Harbour, near Broadstone, W. D. Snooke (*Fl. Vect.* 1823), but Snooke cannot now account for its insertion."—Bromfield in *Phyt.* iii., 491, 1848. "*A. maritima*, not proper specimens, Aug. 30, 1792, a sketch by J. Sowerby from my Lord Lewisham, Woldham Marsh. Also L. Wigg, agreeing most with the other sketch. Been found by the side of the canal in the park of Natl. Lee-Acton Esqre., at Livermere, near Bury, Suffolk."—Garry *Notes* 101. In this latter place the lavender-leaved *Artemisia* was doubtless planted.

The confusion as to its occurrence in Britain is explainable owing to there being in addition to the two named forms (type and *gallica*) of *A. maritima*, plants with a whitish downy leaf, and others which are less hairy and of a bluish green tint. Such attracted the attention of those who took part in the Phyto-geographic excursion at Blakeney and elsewhere in 1911. Gerard distinguished the first as the White Sea Wormwood, the other he mistook, and inserted the nearest figure obtainable—that which serves as *A. marina* 1104, which he says grows at Rie, Winchelsea and Portsmouth by [not in] the Isle of Wight. It was Smith who transferred the last locality to the island, and led to a long series of errors. There is, however, another record for *caerulescens*, that of Merrett (*Pinax* 11, 1666) who, citing Gerard's figure, says it grows betwixt Deal and Dover, and marks it with an asterisk as having been seen by himself, but this locality is no doubt correctly put under *A. maritima* in the *Flora of Kent* 199. In the Dillenian *Ray Syn.* 188, n. 3 and 189, n. 4 two forms of *A. maritima* with broader leaves are given, *i.e.*, Sheerness, Sherard and near Colchester, D. Dale. This latter specimen is in Dillenius' Herbarium at Oxford and is an *A. maritima* form. The occurrence of the true *A. caerulescens* L. in Britain is more than doubtful, and this was the opinion of Syme (*Eng. Bot.* v., 216). See *Fl. Hants* 218. It is a South-European species extending into Portugal, but is not found on the mainland of France. I have seen it in sea marshes near Biguglia in Corsica.

1384. HOMOGYNE ALPINA Cass. in Bull. Soc. Phil. 198, 1876.

Pyrenees, Alps, and mountains of Central and Eastern Europe, Nym. *Consp.* 397.

"*Tussilago alpina.* Rocks among the Clova mountains."—Don *Account* 209. "On rocks by the side of rivulets on the high mountains of Clova, as on a rock called Garrybarns, . . . but we are not on that account prepared to admit the plant as indigenous."—Hook. and Arnott *Br. Fl.* 234, 1850. "Mr G. Don mentions *T. alpina.* . . . May his plant not be the *Erigeron alpinus*, which he has not enumerated?"—Gardiner *Fl. Forf.* 110. "Mr Borrer says of this, 'My specimen . . . is the true plant.' Such being the case I do not understand why the *Homogyne alpina* should be totally excluded from British Floras (*e.g.* Bab. *Man.*), while plants less likely to occur in Britain which rest on no safer authority are admitted even as genuine natives (*e.g. Potentilla tridentata*). I do not, however, believe this to be a British species."—*Cyb. Brit.* iii., 459. "Found by no one else." Syme *Eng. Bot.* v., 217. "One of Don's reputed discoveries." —Hook. *Stud. Fl.* 477, 1870.

Gardiner's suggestion is untenable. Don's specimens are correctly named. That in Lady Aylesford's collection, which she has painted, is labelled "Moist rocks on the Clova mountains." Don, moreover, in his correspondence alludes to having found *Erigeron alpinus* in Perth. *Homogyne* does not occur in Scandinavia. In the *Life* (*l.c.*) I suggested that some young leaf-specimens of *Tussilago Farfara*, which becomes very dwarfed in the alpine districts—and I have seen it at nearly 3000 feet—may have been thought by Don to differ from the lowland Coltsfoot. Planted in his garden he may have afterwards confused it with the continental plant. This seems to be a likely source of confusion, and one not confined to Don. *Cf. Saxifraga Andrewsii*, *Stipa pennata*, etc.

1393. SENECIO ERRATICUS Bert. Rar. Ital. Pl. Dec. iii., 62. Put under *S. barbaraefolius* Krock.

Spain, France, Belgium (r.), Holland, Central and E. Europe, Nym. *Consp.* 358.

First record: Between Cobo and Vale, Guernsey, M. Jacques Gay, Aug. 10, 1832. See *Rep. B.E.C.* 35, 1917. Jersey, La Gasca; marshes behind Ivy Castle, Guernsey; Buttington, Montgomery, Bab. *Prim. Fl. Sarn.* 53, 1839. Babington gradually withdrew these records until in the *Manual* of 1851 he leaves out any reference to Bertoloni's plant. He refers, however, to a larger, much branched form, leaves all lyrate, terminal lobe truncate, or subcordate below, segments subspathulate, which in the *Manual*, ninth edition, 214, 1904 "was [once] supposed to be *erraticus* Bert." Leighton (*Flora Shropshire* 412, 1841), omitting *S. aquaticus*, describes *erraticus* as frequent, *i.e.*, lane leading from Longden to Oaks Hall; banks of river Severn about Shrewsbury, etc. Again (*Charlesworth Mag. Nat. Hist.* iii., 563, 1839) T. Bruges Flowers says it is frequent about Singleton, Glamorganshire. He says it is quite distinct from *S. aquaticus* and well deserving of attention. In the *Edin. Bot. Soc. Cat.* it appears as a variety of *aquaticus*. The claim for its correct identification was challenged by Watson, who designates it "Incogn.," and "supposes Mr Babington mistook it for some form of *aquaticus*." —*Cyb. Br.* ii., 118. Babington acknowledges his error, and says:— "*S. barbaraefolius* Reich., I believe with Koch to be the large form of *aquaticus* which I formerly mistook for the *erraticus* Bert., but do not now distinguish specifically from *aquaticus*. I have never seen the true *S. erraticus* in Britain."—*Bot. Gaz.* ii., 9, 1850. This admission therefore covers another locality, that quoted by Garry (*Notes* 105) on a sketch by J. W. Salter—"Near Callington, Cornwall, July, 1839," where Babington and Borrer reported it as abundant. It is called "a large state of *aquaticus*" in Hook. *Stud. Fl.* 532, and "a mistake for *aquaticus*" in Syme *Eng. Bot.* v., 217. See *Bot. Gaz.* ii., 9, and *Mag. Nat. Hist.* iii., 563.

These numerous references, destructive as they are of the accuracy of the British records, suggest that there is a form of *aquaticus* separable from the type as a variety which awaits further investigation. These criticisms, however, do not touch the high authority of Jacques Gay, whose MS. at Kew has so long escaped attention, and for the knowledge of the existence of which I am indebted to Mr F. N. Williams. The great alterations which have gone on at Vale in Guernsey may have destroyed the plant in its old locality, yet there is little reason to doubt that Gay found it there. It may still reward the persistent searcher in that or the adjacent islands.

1414. CARLINA RACEMOSA L.

Portugal, Spain, Sardinia, Nym. *Consp.* 400.

First recorded at a meeting of the Botanical Society of London, Nov. 7, 1845—Notice of the Discovery of *Carlina racemosa* in Arran Island, Galway Bay, Ireland, in Aug. 1844, by W. Andrews M.R.I.A. A specimen was exhibited. "A single specimen was found in Great Island of Arran, where the plant was no doubt introduced."—*Lond.*

Journ. Bot. iv., 569. See *Cyb. Hib.* 160. Omitted from the second edition. Syme *Eng. Bot.* v., 215.

The question arises—Was it ever found there? The specimen may have been wrongly identified. *C. vulgaris* by the sea becomes strangely altered, and a luxuriant specimen looks quite unlike the chalk-down plant.

1417. ARCTIUM TOMENTOSUM Miller Gard. Dict. 1768.

Widely spread in Europe, not in Britain, Spain, Portugal, etc., Nym. *Consp.* 402.

"East of England." Bab. *Man.* 184, 1856, but as Babington himself admitted (*Man.* 196, 1874) the true *tomentosum* was not a native of Britain, and his *tomentosum* "common near Cambridge" was a variety of *A. majus*. There is another claimant. *A. tomentosum* near Winchelsea, 1866 and in *Herb. Borrer* from Newhaven Bridge (both unnoticed in the *Flora of Sussex*), W. B. Hemsley in Seeman *Journ. Bot.* 263, 1868. Coming from that botanist these records ought to be worth consideration. There is still a third record. "Oxford Botanic Gardens, 1867, to which Mr Baxter says he brought it from Bagley Wood many years before."—*Comp. Cyb.* 530. See *Fl. Berks.* 297. I have been unable to verify Baxter's record for Bagley, which is in Berks., not Oxford, as stated in the *Compendium*.

This is well worth the attention of an investigator. At present it cannot be claimed as a native species on the evidence quoted above.

1498. CREPIS PULCHRA L. Sm. *Eng. Bot.* t. 2325, 1811.

France, W. Germany, ? Belgium, Spain, E. Europe, Nym. *Consp.* 457.

"Amongst crumbling rocks on the hill of Turin, near Forfar, 1796, G. Don, and from seed communicated by him our specimen was raised." —Smith *l.c.* "Not at present known in our gardens, though said to have been cultivated at Chelsea in Rand's time. Mr Don rightly determines it to be a *Crepis*."—Sm. in *Trans. Linn. Soc.* x., 345, 1811. "Incogn. G. Don stated that he had found this plant. . . . . [on] the hills of Turin and Pitscandly in Forfarshire, but very rare."—*Account* 222. "On the hill of Turin it was sought unsuccessfully by Mr Gardiner in 1845, who says (*Fl. Forf.* 99) that a turnip field now occupies the spot."—*Cyb Brit.* ii., 49. "Error."—*Comp. Cyb.* 525. See also Hook. *Fl. Scotica* 233 and Bab. *Man.* 198, 1862. "One of Don's reputed discoveries."—Hook. *Stud. Fl.* 532.

"The very few specimens from Don, which we have seen, are more luxuriant than Smith's acknowledged cultivated one, from which the figure in *Eng. Bot.* was made. Not now found."—Hook. & Arnott *Br. Fl.* 207, 1850. See Syme *Eng. Bot.* v., 217.

Don doubtless found it as an adventive casual, now lost. Its continental distribution is such as to render it a possible native of Britain. The specimen in Lady Aylesford's Herbarium, about 14 inches high, is not luxuriant. It came from the hill of Turin where I have vainly sought it. A specimen in my herbarium from W. Blake has this note by G. Don :—"Dr Smith says that he considers this a very interesting discovery, as few know the plant. Among the debris of rocks on the hills of Turin and Pitscandly."

1508. Hieracium Auricula Sm. *Eng. Bot.* t. 2368, 1812.

Widely spread in Europe but absent from Britain, Lapland, N. Norway, etc., Nym *Consp.* 453.

The specimen figured as above is said by Syme *Eng. Bot.* v., 218 to be *H. glaciale* Lachn., from a specimen from Mont Cenis. The old locality of *H. Auricula*, "in pratis montosis supra Dalehead, non longe a Grasmere in Westmorlandia, sed sparsim," Huds. *Fl. Ang.* 299, 1762, has never been verified, and its identification is only conjectural. Borrer (*Phyt.* ii., 433) reports his want of success. He suggests the locality is above Easedale, between the High Raise and Steel Fell mountains, where are some small pools almost filled up, one or other of which is the Dalehead Tarn of some of the maps, and whence the waters fall into Cumberland N. and Westmorland S. He ascended to this place both from Wythburn and from Grasmere and sought for *H. Auricula.* "Incogn."—*Cyb. Brit.* ii., 52. "Ambiguity."—*Comp. Cyb.* 525.

The true *H. Auricula* has been found by the Rev. E. S. Marshall as a casual at Keevil, Wilts, and Mr Stewart showed it me in a quarry at Cave Hill, Belfast.

1509. Hieracium dubium Sm. *Eng. Bot.* t. 2332, 1811.

"We have lately verified this as a British native, by living specimens from the Cambridge garden received from Scotland by its excellent curator, confirming the authority on which we depended in *Fl. Brit.* Our garden specimen is probably more luxuriant than wild ones."—Sm. *Eng. Bot., l.c.* "On Fairfield mountain, near Rydall, Westmorland, Hudson ; N. England, Mr Woodward."—Sm. *Fl. Brit.*

829, 1800. "*H. dubium* Huds. Fl. Ang. 298, 1762. Keswick, Patterdale, Cumberland; Coxbench Wood, Derbyshire."—*Bot. Guide* 1805. "Incogn."—*Cyb. Brit.* ii., 52. "Mr Backhouse states that the figure of *dubium.* t. 2332, was taken from garden specimens of *H. stoloniferum* Fries, while Smith's description in the *English Flora* was made from *H. Auricula* L."—*Comp. Cyb.* 525.

1509. Hieracium collinum Fries Symb. ad Hist. Hierac. 29, recte *H. pratense* Fries.

"Along the sandy bank of the Ettrick between Selkirk and Philiphaugh, June 27, 1868, J. H. Balfour."—Seeman *Journ. Bot.* 353, 1868. "I am not aware whether the name has been confirmed by Syme or Babington; nor whether the locality can be relied upon as a native one, if assuming the name to have been correctly applied"—*Comp. Cyb.* 525. This is made synonymous with *H. dubium* by Nyman (*Consp.* 451). "Probably the *H. Auricula* L., stated to be found in Westmorland by Hudson (*H. dubium* Fl. Dan. t. 1044)."—Hook. *Stud. Fl.* 532. Put under *H. pratense* Fr. in Bab. *Man.* 232, 1904.

Not dubious as there is little doubt that the Selkirk plant is properly referred to *pratense.* The original locality in Selkirk, where it was adventive, no longer yields it, but it still occurs on railway banks near Edinburgh and in other places in Britain.

1513. Hieracium villosum L.

Alps and mountains of East of Europe, Nym. *Consp.* 450.

"Rocks near Loch Callater, north of Clova."—W. Robertson of Newcastle-on-Tyne in *Herb. Newcastle Museum*, teste J. G. Baker in Seeman *Journ. Bot.* 91, 1865. Specimens are also in Smith's Herbarium, collected by Robertson. "Incogn. The real question seems thus narrowed into a single one, whether Thomas Drummond or any botanist ever collected the true *villosum* on Lochnagar, or on the rocks above Loch Callater (!) or whether *H. Lawsoni* was collected in those places, and cultivated, or foreign specimens of *H. villosum* erroneously substituted for it in Herbaria?"—*Cyb. Brit.* ii., 60. "Error."—*Comp. Cyb.* 527.

A plant not in the least likely to have occurred on the Scottish mountains, but it is included in *Eng. Bot.* by Syme who admits there is considerable doubt if it has occurred in Britain. It is figured, t. 839, from a dried specimen (the origin of which is quite uncertain) from Smith's herbarium. See Syme *Eng. Bot.* v., 183. It is bracketted in Bab. *Man.* 243, 1904, and there it is suggested that "cultivated specimens of *H. villosum* were circulated by mistake, instead of some of the very hairy alpine forms which occur in the Clova district. Nothing approaching *H. villosum* has been found during the past 50 years." It might have been safely added "or at any time in Britain."

1540. HIERACIUM PLUMBEUM Fries.

Under *H. bifidum* Kit., Nym. *Consp.* 444.

Given as British by Fries. See *Bot. Gaz.* iii., 134. "As no native locality is known I omit it"—Backhouse *Mon.* 64. See Syme *Eng. Bot.* v., 218.

1632. HIERACIUM BORRERI Syme Eng. Bot. v., 212, t. 859.

H. denticulatum Borrer MS., not of Smith.

Differs from *prenanthoides* in having fewer leaves, the lower abruptly contracted into long petioles; intermediate leaves regularly oval, not pinched above the base; styles yellow. Harehead Wood, near Selkirk, Dickson. Its history is dubious. Borrer had it from E. Forster, who told him he had it from Dickson, who said he found it in Harehead Wood.

Well worth searching for.

1670. CAMPANULA UNIFLORA Vill.

"The stem solitary, upright, supporting only one flower. Cup as large as the blossom. On mountains in the north and in Wales. P. July-Aug."—With. *Nat. Arr.* i., 128, 1776.

Doubtless a solitary flowered form of *rotundifolia*, not the *C. uniflora* L., which is confined to Norway and Arctic stations.

1700. ERICA CARNEA L.

"In the month of June, 1852, I gathered on a heath near Newton Abbot, South Devon, an *Erica*, which I determined at the time, merely from the characters given in the 'British Flora,' as *E. mediterranea* L. [Subsequently] . . . on comparing [it] with the Irish one [*mediterranea*] and with a Tyrolese specimen . . . and a Savoy one . . . of *E. carnea*, it is evident that it agrees with the latter. . . . I have unfortunately only preserved a single specimen, though my impression is it was not particularly rare . . . and this specimen is marked as decidedly wild. . . . I wish distinctly to disclaim attaching any importance to my memorandum of spontaneity, my object in writing this paper being to induce search in the locality."—Dr. H. F. Hance in Seeman *Journ. Bot.* 136, 1867. "Alien or error?"—*Comp. Cyb.* 536.

1700. ERICA MULTIFLORA (VAGANS?).

Ashover, Derbyshire, Pilkington in *Bot. Guide* 185, 1805. "Error."—*Comp. Cyb.* 536. Unnoticed in *Fl. Derbyshire.*

1760. GENTIANA ACAULIS L. *Eng. Bot.* t. 1594, 1806.

Cantabria, Pyrenees, Alps, Juras eastwards, Nym. *Consp.* 498.

"Wales, C. Konig, who received it from M. St. Amans, the specimen is in J. Banks' Herbarium. Drawn from original specimen gathered near Haverford West in S. Wales."—Sm. *Eng. Bot.*, *l.c.* Near Haverford West, M. de St. Amans in Konig & Sims *Ann. Bot.* ii., 190. See *Bot. Guide* 501, 1800. "Mr Townley, of Manchester, gathered this plant several times on sand hills near Liverpool, where he described it as growing in abundance, far apart from any cultivation. I have seen and possess some of his specimens, which were brought in a living state to the late Mr Crozier." J. Sidebotham in *Phyt.* iii., 71, 1848. "It is difficult to imagine so showy a plant remaining unseen on a frequented track of land . . . and as three other species of the genus — *Pneumonanthe*, *Amarella*, and *campestris* — have undoubtedly been collected there, it is likely enough that one of these three has been mistaken for *G. acaulis.*"—Watson in *Phyt.* 84, 1848. "Doubtless this plant of the Alps has either escaped from cultivation in these stations, or *G. Pneumonanthe* was mistaken for it."—Syme *Eng. Bot.* vi., 81. "Occurring frequently in fine down grass, round by a small headland of Knoydart, up Loch Hourn, Inverness, near the point at which one lands to cross to Barriscale. Blooming between June and September, James Baird."—Reg. Farrer in *Rep B.E.C.* 421, 1916.

G. Pneumonanthe is not reported either for Pembroke or Inverness-shire. The *G. acaulis* of the Chilterns was a condensed state of *Campanula glomerata.* If it is true that the *Eng. Bot.* drawing was made from one of St. Amans' plants, the suggestion of mistaking *Pneumonanthe* for it falls to the ground. He wrote a short account in French of his discovery of it. It seems scarcely possible to imagine he was not writing seriously. See also *Cyb. Brit.* ii., 168: *Comp. Cyb.* 537.

1765. SWERTIA PERENNIS L. *Eng. Bot.* t. 1441, 1806, from a continental specimen.

Pyrenees, Alps, Central and Eastern Europe, Nym. *Consp.* 501.

"Habitat in Wallia. D. Richardson invenit."—Huds. *Fl. Ang.* 87, 1762. "Incogn. Some mistake . . . . luxuriant examples of *Gentiana Pneumonanthe* might be thus misnamed."—*Cyb. Brit.* ii., 177. "No one else has met with it, and there are no British specimens to vouch for its occurrence there."—Syme *Eng. Bot.* vi., 81.

I have been unable to find any reference to this either in the published or unpublished correspondence of Richardson. I suspect a misinterpretation of one of Richardson's records by Hudson. Its continental distribution is against its occurrence in Wales.

1907. VERONICA ALLIONII Hook. Fl. Scotica 8, 1820, not of Villars.

"Mountains in Angusshire, G. Don."—ex D. Don MSS., ined.

This is the glabrous form of *V. officinalis* which is not unfrequent in the Scottish hills. It occurs in Caenlochan. See Syme *Eng. Bot.* vi., 163; Gardiner *Fl. Forf.* 136 and Edmonston *Fl. Shetland.* The true *Allionii* of Villars is limited to the Dauphiny, Savoy, and Piedmontese Alps.

1917. VERONICA FRUTICULOSA Jacq. Sm. *Eng. Bot.* 1028, 1802.

Pyrenees, Sierra Nevada, Alps, Jura, Monte Baldo.

"Seems a garden specm., and too luxuriant, yet the sketch is excellent. Communicated by Dr. Walker in 1782."—Garry *Notes* 132. "Gathered on Ben Cruachan by Dr. Walker from whose original plants, cultivated in his garden, I have specimens. Mr R. Brown, whose accuracy is also beyond all doubt or 'supposition,' told me he found this plant on Ben Lawers."—Sm. *Eng. Fl.* i., 18, 1824 and *Eng. Bot.* n. 1028. "My specimens are from the garden wall at Colinton, where it was planted by the late Reverend Dr. Walker, who, we understand, brought it from Ben Cruachan. . . . I have never seen it on Ben Lawers, and I have no doubt but the *V. saxatilis* has been mistaken for it."—Don *Herb. Brit.* n. 202. "*V. suffruticosa* Sm. [*sic*] is probably a mistake."—Bab. *Man.* 319, 1904. "Said to have been found in Ben Cruachan by Rev. Dr. Walker and by Dr. [*sic*] Robert Brown on Ben Lomond [*sic*]. No doubt a mistake."—Syme *Eng. Bot.* vi., 188. "Reported from Scotland. Never confirmed."—Hook. *Stud. Fl.* 533. *V. fruticans* Jacq., var. *viscosa* Williams. Localities as above, but adds Craig Mohr, Glen Lochay, Perth, W. B. Boyd.—Williams *Prod.* 286. There appears to be doubt as to the identity of Boyd's plant with the true *fruticulosa.* He told me he had only gathered pink *saxatilis.* "On a wall near Edinburgh." —H. M. Balfour in *Cyb. Brit.* ii., 198. Alien here and error of identification elsewhere. It is suggested that a pinkish-flowered form of *V. fruticans* was mistaken for it.

1948. BARTSIA ODONTITES Huds., var. ROTUNDATA Ball in Ann. Nat. Hist. ser. 2, iv., 30, 1849.

Bepton Common, Sussex, Miss Plowden. Cambridgeshire, J. Ball. *l.c.* Introduced into the third edition of *Bot. Soc. Lond. Cat.* 1850. Ball founded his *rotundata* on the Bepton plant. It should be refound, to see whether it is worth varietal rank. See Syme *Eng. Bot.* vi., 174. Omitted from the *Manual.* "Unknown to me."—*Comp. Cyb.* 540. A search in 1920 was unsuccessful.

1966. OROBANCHE LUCORUM A. Br., ex F. Schultz in Flora xxvi., 504, 1843.

Bavaria, Carinthia, Carniola, Tyrol, Switzerland, Nym. *Consp.* 558.

"Found near Epsom. From the back of the grand stand on Epsom race-course, proceed through the fields to the town of Epsom, and the plant will be found amongst clover, rarely among wheat, on the right hand side on the back of the hill. July 1846. Mr Williamson."—*Cyb Brit.* ii., 226. Placed under *O. major* L. = *elatior* by Syme *Eng. Bot.* vi., 197, but he says the upper segments of the sepals are much broader and more acuminated.

The specimen in *Herb. Watson* I should refer to *O. major.*

1972. OROBANCHE ARENARIA Bab. Man. 229, 1847, not of Borkhausen.

Spain, France, Italy, Germany, etc., Nym. *Consp.* 557.

"On *Achillea Millefolium* in the Channel Isles."—Bab. *Man.* 229, 1847. "Alderney. The Jersey plant is *O. caerulea.*"—Bab. *Man.* 251, 1874.

Identity doubtful. All the specimens of the blue *Orobanche* I collected in Alderney are referred by Beck to *O. purpurea.* The plate in *Eng. Bot.* vi., 1008 is copied from Reichenbach's continental figure.

1980. PINGUICULA LONGICORNIS Gay.

"In a valley near Helvellyn, J. Woods."—Babington in *Phyt.* 310, 1842. "The plant of Mr Woods was an unusually wide-flowering variety of *P. vulgaris* which I have seen growing in the same place.

Living specimens were exhibited at the Linnean Society when some one suggested that it might be Gay's species, hence the error."—W. Borrer in *Bot. Gaz.* ii., 95, 1850. "*P. longicornis* must be erased."—Bab. *Man.* 1843. See *Cyb. Brit.* ii., 287 ; iii., 488.

Search might well be made to see if it is not the same plant as I found in Kintail, i.e., the var. *alpicola* Reichb. Was Gay's species ever published? There is no evidence to connect the Helvellyn plant with it.

1997. MENTHA PRATENSIS Sole Brit. Menth. 39, t. 77.

M. gracilis, var. b. Smith Eng. Fl. ii., 84. *M. sativa*, var. *pratensis* Bab. Man.

"In wet places in the New Forest, Hants., particularly in a Common (Alderbury Common) near the 'Roebuck,' between Salisbury and Romsey in 1789. It has not varied in the least by cultivation."—Sole *Brit. Menth.* See *Fl. Hants.* 296. In my copy, which belonged to Sole, he has added in writing—"Dr. Smith makes this new mint first a variety of the following (*rubra-gentilis*), and soon after, in a future observation, he chooses it shall be a variety of my *sativa*, t. 21. Quaere, is not the Dr. full as ardent for varieties as he says I am for species? The Dr. has in his last Fl. [*Eng. Fl.* iii., 85] made it a *gracilis*."—W. Sole. Hooker (*Stud. Fl.* 317) puts it under *sativa*. Syme (*Eng. Bot.* vii., 18, t. 1036) keeps it as a distinct species. In the *British Plant List* I place it under *gentilis* L.

This is not a dubious plant. Its grade may be doubtful, and perhaps it should have been put under the extinct species. Probably it was originally a cultivated mint which had escaped, but this is conjectural. Search in some of the old gardens or even in wild situations might reward the worker.

2005. ORIGANUM ONITES L.

Asia Minor, Syria, Sicily, Greece, etc., Nym. *Consp.* 592.

"Recorded as *O. Onites* C.B. Pinax 223, on the left hand of the road from Braintree to Raine beyond the bridge. Mr Dale."—Ray *Syn.* 237, 1724. With. *Bot. Arr.* 365, 1776. "Our claim to this seems rather less than dubious."—Stokes *With. Nat. Arr.* ii., 1, 1787. "A misnomer of *O. vulgare.* ? Error."—*Comp. Cyb.* 545. "Incogn."—*Cyb. Brit.* ii., 243. "A mistake for *vulgare.*"—Syme *Eng. Bot.* vii., 86.

2005. ORIGANUM VIRENS J. E. Gray, not of Hoffing. & Link Fl. Port. i., 119. Syme *Eng. Bot.* vii., 86.

The true *virens* is confined to Spain and Portugal, Nym. *Consp.* 592. The *O. virens* (*Lond. Cat.* ed. 6, 29, 1867, ambiguity, on the authority of a specimen found in the Isle of Wight by Dr J. E. Gray) is a form of *O. vulgare*, which appears to be a hybrid of the white-flowered *vulgare* with the type. I saw it in some quantity near Apes Down.

2026. SALVIA CLANDESTINA Bab., non L.

Lizard Point, Cornwall, Bab. *Man.* 245, 1847. ? Near Pontac and St. Clements, Jersey; Guernsey, Bab. *Prim. Fl. Sarn.* 71, 1839. Kennack, J. Cunnack in *Herb. Bab.* It is a very poor shrivelled specimen which Salmon refers to *S. Verbenaca.* "No specimens of true *clandestina* from Britain are contained in the *Bab. Herb.* at Cambridge . . . this was Syme's view."—Druce, quoted in *Flora of Cornwall* 360. "*Clandestina* does not occur in Britain."—Pugsley. See *Journ. Bot.* 97 106, 141-151, 1908. "All the specimens . . . from Cornwall labelled '*S. clandestina*' are only *Verbenaca*, to which also a plant from Vale Church, Guernsey, must be referred. About Pontac and St. Clements [Babington's locality for *clandestina*], after a most careful search, I could find nothing but *Verbenaca*."—Syme *Eng. Bot.* vii., 44. Piquet's Jersey specimens are *Verbenaca*.

S. clandestina, Guernsey, Mr Borrer, in Syme *Eng. Bot.* vii., 43, t. 1057, queried by Syme as of Linn. This is the plant which I have named *S. Marquandii*, differing as it does from the true *clandestina* which is given in error for England S. & W. in Nym. *Consp.* 570 and correctly there for France, Spain, Italy, etc. Babington dwelt upon the character of the longer corolla-tube which is not the essential feature. *Verbenaca* has two forms, one with a short, the other with a long corolla-tube. *S. clandestina* is unlikely to occur in Britain other than adventive.

2085. AJUGA ALPINA Sm. Eng. Bot. t. 477, 1790.

"We have received a specimen from Durham by favour of Mr Robson, and another gathered by Mr Dawson Turner in July 1795 on the summit of a mountain near Castleton, Derby. There is no doubt as to its being the *alpina* L."—Smith *l.c.* "'June 24, 1897, Robson.' Smith, referring to outline of single leaf at bottom of plate 477: 'A leaf from near the root, traced from an English specimen;

this ought to be engraved'."—Garry *Notes* 144. "It is erroneously stated in *Eng. Bot.* that this plant has been found in Durham by Mr Robson, for the specimen he sent to Sowerby was from his garden."—Winch. in *Bot. Guide* 251. "On the mountain that leads from Matlock into the town of Castleton, on the left hand side, immediately adjoining the road."—Dillwyn Turner in *Bot. Guide* 188, 1805. It may be added that the figure in *Eng. Bot.* t. 477 does not represent true *alpina* but a garden hybrid of *alpina* and *vulgaris* = × *A. Knafii*, var. *Smithiana* Rouy. "*A. alpina* has been said to grow in Carnarvon, Derby, Durham, ? Westmorland, Forfar, Aberdeen . . . the only examples of so-called *alpina*, which I have seen, were the two specimens reported by the late Prof. Graham (*Excursions* 1831) and referred to in Gardiner *Fl. Forf.* 144. I was with Dr. Graham when he picked those specimens and one of them is now in my herbarium, undistinguishable from *A. reptans*, according to my eyes."—*Cyb. Brit.* ii., 250. This specimen is in *Herb. Wats.* and is merely stolonless *reptans*. "Stream falling into the White Water, Clova, above the falls: only two specimens found, Prof. Graham."—Gardiner *Fl. Forf.* 144. There is a doubtful specimen gathered in Blair Athol by W. Christy. See *Bot. Mag.* ii., 9. 1850. In Syme *Eng. Bot.* vii., 87, the localities of *A. alpina*, *genevensis*, and perhaps *pyramidalis* are inextricably mingled. There is another record which may be cited as possibly referring to *A. alpina*—"Consolidam mediam flore caeruleo Alpinam invenimus. On Carnedh Llewellyn."—See Johnson *Mercurii Botanici* ii., 1641.

This locality, which I vainly explored in 1919, and the Derbyshire one are well worth systematic search.

2043. SCUTELLARIA HASTIFOLIA L.

Sweden, Finland, Germany, Holland, Belgium, France, etc., Nym. *Consp.* 573.

"Two specimens came to the Botanical Society of London labelled Ickleford Common, Hertfordshire, under the name *S. galericulata*. No additional information could be obtained."—*Cyb. Brit.* ii., 268. The specimens were sent by Mr S. Warner, but on being applied to he was unable to give any information. See *Fl. Herts.* 320. "What seems a morsel of this species was given me by the late T. F. Bree as gathered by himself near Tintagel, but I could not find any *Scutellaria* in the place to which he directed me."—W. Borrer in *Bot. Gaz.* ii., 97,

1850. "Error."—*Comp. Cyb.* 547. Unnoticed in the *Flora of Cornwall.*

The continental distribution favours its occurrence in Britain of which as yet we have no sure evidence.

2080. TEUCRIUM SCORDIOIDES Bab. Man. 253, 1847, not of Schreber.

This is an error of Babington's. The Braunton Burrows' plant is a form or var. of *Scordium* not the *scordioides* of Schreber which occurs (Nym. *Consp.* 565) in France, Portugal, Spain, etc.

2082. TEUCRIUM REGIUM Schreber Pl. Unilab. 35.

Spain, *Ind. Kew.* 1056.

On the slope of Blorenge. Mr E. Y. Steele. See *Ann. Nat. Hist.* v., 377. "It is to be much feared that some mistake has occurred in stating this plant grows on the Blorenge, near Abergavenny, as the exact spot on which it is believed to have been gathered has been examined carefully by a distinguished botanist but without success."—Babington in *Phyt.* i., 310, 1841, and *Man.* 253, 1847.

2105. HERNIARIA HIRSUTA L.

Sm. *Eng. Bot.* t. 1379. The specimen figured is from Curtis' garden. "An 2 *Herniaria hirsuta* in Hort. Sicc. Buddlejano habetur sed locus non additur, Petiver: in arenoso nascisit, ubi vero tacet."—Dill. *Ray. Syn.* 161, 1724. Colney Hatch, near Barnet, Huds. *Fl. Ang.* 94, 1762. Finchley Common, 1795, Mr Dickson. but Babington (*Eng. Bot. Suppl.* 2857) says it is *H. glabra.* "Cornwall, Stackhouse." Sm. *Eng. Fl.* ii., 9, 1824. This is *ciliata.* "Incogn. The true *hirsuta* has probably never occurred in Britain."—*Cyb. Brit.* i., 389. "Wild in Cornwall, from whence we have received specimens."—Garry *Notes* 153. An error for *H. ciliata.*

H. hirsuta has a wide range on the continent—Holland, Belgium, W. Germany, France, Portugal, Spain, Italy, etc., and is not an improbable plant to be native in England. It has occurred as an adventive species abundantly near Christchurch, Hants. in 1879 and 1881, but it soon disappeared. Par, Cornwall. Yorks, adventive.

2215 (2). DAPHNE CNEORUM L.

Pyrenees, Alps, Spain, etc., Nym. *Consp.* 641.

"Said to have been found by Mr Meyrick . . . about two miles from Beddgelert, by the road side leading to Carnarvon, just at the place where the ascent to Snowden begins. It has since been sought for in vain by many botanists. Bingley."—*Bot. Guide* 83, 1805. "Incogn. No doubt erroneously reported.'—*Cyb. Brit.* ii., 353. "Error."—*Comp. Cyb.* 557.

2218. THESIUM INTERMEDIUM Schrader Spicil. Fl. Germ. 27, 1806. Germany, Austria, Switzerland, E. Europe, Nym. *Consp.* 643.

"Said to be a native of Britain but all the specimens which I have seen belong to *humifusum*."—Bab. *Man.* 278, 1847.

What is Babington's authority for the record?

2218 (2). THESIUM HUMILE Vahl Symb. Bot. iii., 43.

"I gathered two specimens of this plant somewhere near Dawlish, Devon, in 1829."—Bab. *Man.* 278, 1847. "It was probably not indigenous."—Bab. *Man.* 228, 1856. "Error. Not verified."—*Comp. Cyb.* 557. See Syme *Eng. Bot.* viii., 89.

Never gathered again and therefore unworthy of a place in British Floras being a native of Spain (not France), Greece, and E. Europe. Nyman (*Consp.* 644), on Babington's authority, cites it for "Ang. mer.-occ. lectum" on the faith of two specimens gathered in an unknown place and never refound; probably from a garden. Babington was then only 21 years of age and probably not versed in the importance of noting habitats. No allusion is made in his *Journal* to any plant except the Bee Orchis till 1830. Evidently he had no recollection of its place of growth nor is there any likelihood of seeing it except planted in Britain. It is therefore scarcely worth insertion in the *Camb. Fl.*

2226. EUPHORBIA CHARACIAS L. Sm. *Eng. Bot.* t. 442, 1797.

Portugal, Spain, S. France, Italy, Crete, Nym. *Consp.* 651.

"*Tithymalus characias Monspeliensium.*" Ger. *Herb.* 403. "On the paper-mill pool dam in Heywood Park, Staffordshire, Dr. Plot."—Ray *Syn.* 312, 1724. *E. Characias.* Huds. *Fl. Ang.* 185, 1762, same locality. "I have searched for it without success. Said to have been found in Needwood Forest."—Stokes *With. Nat. Arr.* ii., 501, 1787. "Observed in the forest of Needwood, Staffs, in great plenty, undoubtedly wild, by Mr Whately, Surgeon in the old Jewry. . . . The root from which our specimen was taken was found wild two years since."—Sm. *Eng. Bot.* t. 442, 1797. "Mr Lambert will tell the habitat exactly who gave the plant this grew from two years ago to Mr Forster--from Portland Island. Specimen in *Herb. Sowerby* from which figure was drawn is labelled, on a separate slip from that giving the name and number of plate in *E.B.*, 'Bow and Arrow Castle, Portland Island, gathered by J.S.'"—See Garry *Notes* 166. "Needwood Forest [only]."—Sm. *Eng. Fl.* iv., 68. "Has no claim to be considered native"—Bab. *Man.* 1847. "Incogn. *E. amygdaloides* appears to have been occasionally mistaken for *Characias* which has never been found wild in England, and which it is said would not bear the climate . . . without protection in winter."—*Cyb. Brit.* 365. "Error."—*Comp. Cyb.* 558. "Worcestershire, but no doubt *amygdaloides* was mistaken for it."—Syme *Eng. Bot.* viii., 117.

2273. SALIX ROSMARINIFOLIA L. Sm. *Eng. Bot.* t. 1365, 1804.

S. Scandinavia, E. Denmark, Germany, ? France, Central Europe, etc., Nym. *Consp.* 668.

"*S. pumila Rhamni secundi Clusii folio.* Found amongst Mr J. Sherard's dried plants, the place not stated." Dill. *Ray Syn.* 447, 1724. The specimen is a form of *S. viminalis*, wrongly identified by Smith. See Druce and Vines *Dill. Herb.* 126. "Sent by Mr Dickson, probably from Scotland, to Mr Crowe."—Sm. *Eng. Bot., l.c.*; *Eng. Fl.* iv., 214. [On such slender evidence it was admitted to our Floras]. "In Eridge Park, Sussex, Forster. Edge of a rivulet which runs into Semer Water, Wensley Dale, Curtis. Banks of the Derwent near Ebchester, Westmorland, Mr Thornhill."—*Bot. Guide* 259, 1805, but Smith cites none of these in *Eng. Fl.* 214. Moss (*Camb. Fl.* ii., 49) says there is a specimen in *Herb. Mus. Brit.* from the banks of the Derwent, Durham, from Winch, who records it in *Fl. North. and Durh.* 63, 1831. The "var. *angustifolia*" which is figured in *Eng. Bot.* t. 1366 as *S. Arbuscula* is said to have been gathered in the Highlands of Scotland by Mr Dickson and to have occurred on the Clova mountains and on the banks of the Nith, twenty miles from Dumfries. See Syme *Eng. Bot.* viii., 249. "Within thirty miles from Poole in Dorset. Dr. Salter *Cat.*"—*Cyb. Brit.* ii., 401. "Ambiguity, Sussex, Suffolk, Monmouth, York, Tyne, Islay. Balf. *Cat.*"—*Comp. Cyb.* 575. "Clova, Dumfries."—Bab. *Man.* 56, 1847, and no further information is given on 383, 1904. "Cannot be admitted to a place in the British Flora."—Buch.-White *Revision of the British Willows* in *Journ. Linn. Soc.* 391, 1890. "*S. repens*, var. *rosmarinifolius.* There is much doubt whether this form was ever a plant of British origin. It is known only in gardens at the present time, and for a long while back."—Linton *British Willows* 60, 1913, and with this citation from one best qualified to judge the matter may be left. There is, however, nothing in its continental distribution adverse to its being a native of the north of Britain and the matter should be borne in mind by workers there.

2275. SALIX GRANDIFOLIA Seringe Ess. Saul. 20, 1815.

Alps, Juras, Baden, Bavaria, Switzerland, E. Europe, Nym. *Consp.* 667.

Near Queensferry, Linlithgow, H. C. Watson. Dr. Andersson says " Folia *S. grandifoliam* valde emulant—quare haec species adhinc Britanniae dubia civis."—*Bot. Gaz.* 62, 1851. See Syme *Eng. Bot.* viii., 262.

2278. SALIX INCANA Schrank Baier Fl. i., 230, 1789.

N. Spain, France, Italy, S. Germany, Austria, Hungary, E. Europe, Nym. *Consp.* 666.

" Ambleside, Cumberland [*sic*], Rev. Dr. F. R. Tennant, 1894."—*Camb. Fl.* ii., 60. "I am almost certain the bush grew on the edge of a stream, either the Rothay or a tributary, and quite close to the town."--Tennant, *l.c.*

But Ambleside is in Westmorland not Cumberland, and *incana* is no more likely to be indigenous by a stream there than it would be in Hyde Park. An alien, one bush alone noticed.

2279. SALIX HASTATA L. *S. malifolia* Sm. *Eng. Bot.* t. 1617, 1806.

Scandinavia, Denmark, Germany, France, Central Europe, Spain, Nym. *Consp.* 669.

" Mr Crowe collected it but cannot now recollect its present place of growth, but is persuaded he found it wild in some part of Norfolk. and from the habit one would suppose it an upland species."—Sm., *l.c.* " Perhaps originally sent [from Scotland] by Dickson."—Sm. *Eng. Fl.* iv., 180. "Sands of Barrie, Mr G. Don [*sic*]."—Gardiner *Fl. Forf.* 169. "It is most improbable that this plant which is truly alpine on the continent, growing in Switzerland only at great elevations, should be even naturalised on the Sands of Barrie where Drummond (sp. in *Herb. Brit. Mus.*) [says he] met with it."—Hook. and Arnott *Br. Fl.* ed. 6, 433, 1830. Hollick Wood, at Colney Hatch Middlesex, Mr J. Woods, Jun. in *Bot. Guide* 413, 1805. "Not at all likely to occur either wild or cultivated."—*Fl. Middlesex* 260. " No evidence to show that

S. hastata has ever occurred in this country as an indigenous plant." —*Camb. Fl.* 39. "An alpine species, which cannot have been native, if indeed it were ever found."—Syme *Eng. Bot.* viii., 262. "Probably ought to be expunged."—*Cyb. Brit.* ii., 397; iii., 509. "Error!"—*Comp. Cyb.* 575.

2283. SALIX HELVETICA Villars Hist. Pl. Dauph. iii., 783, 1789.

Alps, Switzerland, France, Italy, Austria, Nym. *Consp.* 670.

Ben Lawers, as *S. glauca*, Winch in *Herb. Edin. Univ.*, teste Buch.-White in *Revision of the British Willows* in *Journ. Linn. Soc.* 499, 1890. Never confirmed.

2284. SALIX RETUSA L.

Pyrenees, Alps, Apennines, E. Europe, Nym. *Consp.* 670.

"Gathered on Ben Lawers by a friend of Wyville T. C. Thomson." —*Trans. Bot. Soc. Edin.* Jan. 10, 1850, and mentioned in *Bot. Gaz.* ii., 52, 1850. See Syme *Eng. Bot.* viii., 263. "Error."—*Comp. Cyb.* 576. Not mentioned in *Camb. Fl.*

Error. Dickson's *S. retusa* (*Trans. Linn. Soc* ii., 288, 1794) is *S. Myrsinites.*

2304. LIMODORUM ABORTIVUM Swartz in Nov. Act. Soc. Sc. Upsala vi., 80, 1799.

Portugal, Spain, France, Alsace, Lorraine, Luxembourg, Baden, Central Europe, Nym. *Consp.* 687.

"*Nidus avis flore et caule violaceo purpureo colore*: an *Pseudoleimodorou* Clus. Hist. Rar. Plant, p. 270. This riseth vp with a stalke about nine inches high, with a few smal, narrow, sharpe pointed, short, skinny leaues, set without order, very little or nothing at al wrapping or inclosing the stalke: hauing a spike of floures like those of *Orobanche*, without tailes or leaues growing amongst them: which fallen, there succeed small seed-vessels. The lower part of the stalke within the ground is not round like an *Orobanche* but slender or long and of a yellowish-white colour, with very many smal brittle roots growing vnderneath confusedly, wrapt or folded together like those of the common *Nidus auis.* The whole plant as it appeareth above ground, both stalkes, leaues, and floures, is of a violet or deepe purple colour. This I found wilde in the border of a field called Marborne, neere Habridge in Haliborne, a mile from a towne called Alton in

Hampshire, John Goodyer, 29 June 1621, with *Corona fratrum* [*Cirsium eriophorum*]."—Gerard *Herb.* 228, 1633.

With Smith (*Trans. Linn. Soc.* iv., 1764) and Bromfield (*Phyt.* 608, 1849) I have little doubt in referring it to *Orobanche purpurea*. Ray (*Cat. Pl. Angl.* 224, 1670) took a different, and I think, a mistaken view, for he identifies Goodyer's plant with *Orchis abortiva 2 sive violacea* C.B , and he was followed by Bobart who while citing C.B.P. gave it a new name *19 Orobanche radice compacta major flore violacea.* C.B.P. (*Hist. Oxon.* ii., 503-4, 1699), as was done by Dillenius who also thought it to be *Limodorum* (*Syn.* 383, 1724). Hudson took the same view and called it *Orchis abortiva*, quoting the same locality (*Fl. Ang.* 336, 1762, ed. 2, 386, 1778, and ed. 3, 1798). Townsend (*Fl. Hants.* 642) suggests that Goodyer's plant was *Epipactis violacea* (*Helleborine purpurata*). but this is quite untenable. An open field with *Cirsium eriophorum* is not the habitat for *Helleborine purpurata*, the description is not applicable, and in England the plant does not flower so early as June 29. A writer in a note in a copy of the Dillenian *Ray*, probably Yalden, suggests *Lathraea Squamaria* which does not in the least answer the description, the habitat, or the time of flowering.

Goodyer's plant was doubtless *Orobanche purpurea* which is usually without the thickened base so pronounced in the common Orobanches It agrees with the description, habitat, and time of flowering, and Goodyer was its first recorder in Britain. As to its being *Limodorum abortivum* one need scarcely waste a sentence in negativing it. Ray probably did not notice the word "an" before its name in Gerard. Its flowers are bracteate, the flowers are not wholly blue or violet but have brilliant yellow markings, and its height is usually above nine inches. I have repeatedly on June 29 searched the field, now called Narborne, unsuccessfully. There is an abundance of Yarrow still there on which *Orobanche purpurea* is parasitic.

2338. HABENARIA ODORATISSIMA Franchet Fl. Loir-et-Cher 578.

Gymnadenia odoratissima A. Rich. in Mém. Mus. Paris iv., 57, 1818.

Sweden, Luxembourg, France, Germany, N. Italy, Austria, Hungary, etc., Nym. *Consp.* 695.

"Between Juniper Hill and Box Hill, Surrey, June 28, 1833."—W. Pamplin and A. Irvine in *Mag. Nat. Hist.* ix., 475, 1836. A solitary plant only was found. The finders compared it with the description in Persoon *Syn.* and the fig. in Bauhin's *Prod.*

Unfortunately they make no mention of the leaves. "A second species has been supposed to occur in the South of England but some error may have arisen through the circumstance of *Conopsea* differing much in scent according to soil or humidity."—*Cyb. Brit.* ii., 429; *Comp. Cyb.* 578. Dr Heslop-Harrison says he found a single specimen on the Magnesian Limestone in E. Durham. See *Rep. B.E.C.* 429, 1916.

It may well occur in Britain.

2345. IRIS XIPHIUM L.

Portugal, Spain, S. France, etc., Nym. *Consp.* 699.

"By the river's side near Fladbury and some other places in this county; first discovered by the Duchess Dowager of Portland."—Nash *Hist. Worc. Int.* lxxxix, 1781. Stokes in With. *Nat. Arr.* i., 41, 1787. Cited in *Bot. Guide* ii., 656, 1805. "The introduction of this as a Worcestershire plant is said to be an error."—*New Bot. Guide* 205, 1835. See Syme *Eng. Bot.* ix., 155.

2346. IRIS XIPHIOIDES Ehrh. Beitr. vii., 140. Curt. *Bot. Mag.* t. 670.

Pyrenees, Asturias, Nym. *Consp.* 700.

"In a marsh near Colonel Kinloch's of Logie, Forfar, in 1810, among Carices and Junci in a situation where it had never been cultivated, George Don. See *Account* 217. There is a specimen in Lady Aylesford's Herbarium. "At Gelly Evan, near Penllergare, for upwards of 40 years."—Dillwyn *Mat. for a Fauna and Flora of Swansea.* See *Cyb. Brit.* ii., 440; *Comp. Cyb.* 579, and Syme *Eng. Bot.* ix., 155.

Of garden origin.

2409. SCILLA BIFOLIA L. Sm. *Eng. Bot.* n. 24, 1791, from a garden specimen.

Holland, Belgium, France, Germany, Austria, Switzerland, Italy, etc., Nym. *Consp.* 730.

Teignmouth, Devon, Mrs Gulson who "found only a few specimens which she brought into her garden, and that the plant was not now to be found in the neighbourhood."—Syme *Eng. Bot.* ix., 226. "Received from the west of England by Mr Sims, druggist, of Norwich. It is also in Buddle's herbarium (containing native species only)."—Sm. *Fl. Brit.* 365, 1800, and *Eng. Fl., l.c.* The *Scilla bifolia* in Huds. *Fl. Ang.* 123, 1762 is *S. verna.* Hudson (*Fl. Ang.*

ed. 2, 142, 1778) says "planta ex Scotia sub nomine *Scillae bifoliae* accepi quae Scotiae nec Angliae indigena est."

2461. TYPHA MINIMA L. Sm. *Eng. Bot.* t. 1457, 1805.

France. S. and E. Italy, Switzerland, Alsace, Baden, Bavaria, Austria, Hungary, etc., Nym. *Consp.* 757.

Typha palustris minor C. B. Pin. Found by Mr Dandridge on Hounslow Heath where the *Sium alterum Olusatri facie* grows."—Dill. *Ray Syn.* 436, 1724. "An error for *angustifolia.*"—Trim. and Dyer *Fl. Middlesex* 287. "As the plant was well known and distinguished by the botanists (Dillenius, etc.) of that time . . . we presume there could be no mistake about it. The specimen figured is from Geneva."—Sm. *Eng. Bot.*, *l.c.* "From a marl-pit north of Little Crosby on the Lancashire coast, 1801."—Hall's *Flora of Liverpool* 1865. "There are specimens in the herbarium, Wavertree Bot. Gard., of *T. minor* Sm. from a large marl-pit north of Little Crosby and gathered in 1801 by J. S[hepherd]. We have no information to give concerning the plant, other than that no one has met with it since Mr Shepherd."—*Fl. Liverpool.* 137, 1872. "*T. minor* grows with *T. latifolia* in a dyke at West Hythe."—G. E. Smith *Cat. Pl. S. Kent* 60. "I have myself a distinct recollection of having seen examples some years ago collected I believe in Kent and sent to the late Mr David Don, in whose possession I feel pretty sure they were when I saw them."—Bromfield in *Phyt.* iii., 1007, 1848. Not noticed in *Fl. Kent.* "Mr T. Flower wrote to me—'This is an error and ought to be corrected. Prof. Don showed me the specimen which he had supposed to be *T. minor* but afterwards altered his opinion and believed it a small form of *T. angustifolia.*'"—*Cyb. Brit.* iii., 36. "Error. Apparently through misnomers. The Liverpool example was *angustifolia.*"—*Comp. Cyb.* 586. Syme *Eng. Bot.* ix., 9. There is a reference to the Kentish specimen of small size and with short female catkins in the marshes between Sandwich and Deal. Rev. W. Wood in *Trans. Linn. Soc.* Nov. 5, and *Ann. Nat. Hist.* 279, 1840.

2550. ERIOPHORUM CAPITATUM Sm. Eng. Bot. t. 2387, not of Host.

"Discovered by Mr Geo. Don, Aug. 12, 1810, by the side of a rivulet on Ben Lawers, near the limits of perpetual snow. The plants were rooted in a sandbank and appeared to have been brought by alpine torrents from some still more inaccessible part of the mountain. His specimen agrees exactly with those sent by Prof. Schrader, and from Switzerland."—Smith, *l.c.* See Hook. *Fl. Scotica* 20, 1820, and Smith *Eng. Fl.* i., 66, 1824. "We fear that Mr Don has mixed, by mistake, some foreign specimen in his possession with the *E. vaginatum*, which is very common on Ben Lawers, and which alone we have found there; most [*sic*] specimens distributed by him belong to *E. vaginatum*."—Hook. and Arnott *Br. Fl.* 498, 1850. "Mr Don's authentic specimen (*Herb. Hook.*) resembles *capitatum*, but the upper part of the stem is triangular."—Bab. *Man.* ed 3, 352, 1851. "*E. polystachion* (L.), b. *minus*. An alpine form, has but one nearly sessile spike = *E. capitatum* Don?"—Bab. *Man.* 385, 1874, a mistake which is continued in the ninth edition of 1904. "Incogn."—*Cyb. Brit.* iii., 82. "Error."—*Comp. Cyb.* 587. "The figure in *Eng. Bot.* t. 2387 is certainly nothing more than *E. vaginatum*, and the only specimen of Don's supposed *capitatum* which I ever saw (*Herb. Bot. Soc. of London*) belonged without doubt to the same species."—Syme *Eng. Bot.* x., 174.

There is in Don's own herbarium a specimen labelled "*E. capitatum*. On Ben Lawers and Clova mountains. I discovered this in 1810." It is a small alpine form of *E. vaginatum* L., not the *E. capitatum* Host, which is synonymous with *E. Scheuchzeri* Hoppe, as the stems are decidedly trigonous, not cylindric, and the bracts are greyish-green, not black. The correct reading should be:—An alpine form of *E. vaginatum* gathered by Don on Ben Lawers and Clova was mistaken by Smith for *E. capitatum* Host. See Don *Life* 118.

2566. CAREX HORDEISTICHOS Vill. Prosp. 18, 1779.

C. secalina Sm. Eng. Bot. iv., 126. *C. hordeiformis* Wahl.

Holland, Alsace, Central France, Spain, Bavaria, E. Europe, Nym. *Consp.* 769.

"In a Den near Panmure, about nine miles south-east of Forfar, Mr T. Drummond. My friend, Mr W. Robertson of Newcastle, favoured me with specimens of this among Mr Drummond's Scottish discoveries."—Sm. *Eng. Fl.*, *l.c.* "Amongst some bushes near a spring, rare, in a small valley about three miles west of Panmure, T. Drummond *Brit. Flora* 1830, but in 1827 we had received a specimen from Drummond from the Sidlaw Hills . . . there seems no doubt that they were obtained from his own garden, and were among the curiosities which the late Mr Don had amassed there: so that the species ought to be expunged from our Flora."—Hook. and Arnott *Br. Fl.* 506, 1850. "Small valley about three miles west of ed. 2, 142, 1778) says "planta ex Scotia sub nomine *Scillae bifoliae* accepi quae Scotiae nec Angliae indigena est."

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Panmure, T. Drummond. A day in June, 1846, was entirely devoted to searching for the locality of this rare plant, without success. Every little hollow, nook, and crannie . . . was carefully examined, enquiries made about such a spot at many residents of the district, and the Den of Pitairlie explored from one end to the other, but no trace of the Barley Carex met with."—Gardiner *Fl. Forf.* 217. "Error."—*Comp. Cyb.* 591. "One of Don's reputed discoveries."—Hook. *Stud. Fl.* 535, a statement which might be correct if Don had ever reported it, but he had not.

2566. CAREX ANGUSTIFOLIA Sm. Eng. Fl. iv., 127, 1828.

"In a marsh in Angusshire, Mr G. Don. Of this I have seen but one specimen and that none of the best. I cannot refer it to any described species, though in many particulars it is not very remote from *C. filiformis*."—Smith, *l.c.* "Ambiguity."—*Comp. Cyb.* 591.

2593. CAREX LAXA Wahlenberg in Vet. Acad. Nya Hand. Stockh. 156, 1803.

"Rocks among the Clova mountains."—Don *Account.* 209, 1813. "Error."—*Comp. Cyb.* 591.

Probably a mistake since *C. laxa* is only known for Lapland, N. Sweden, and Arctic Norway (Nym. *Consp.* 775). It is allied to *C. limosa.*

2604. CAREX GIBSONI Bab. in Bot. Soc. Edinb. Jan. 12, 1843.

Near Hebden Bridge, Yorkshire, S. Gibson. See *Phyt.* 493, 1843. "Said to be now lost by drainage."—Bab. *Man.* 362, 1847. "Incogn. or extinct."—*Cyb. Brit.* iii., 111. "Ambiguity."—*Comp. Cyb.* 589. "A variety of *C. vulgaris* with enlarged perigynia."—Syme *Eng. Bot.* x., 115.

Awaits rediscovery.

2607. CAREX GEBHARDI Willd. Sp. Pl. iv., 240.

Given without locality as a var. of *elongata* in Bab. *Man.* 358, 1851. "I have seen no British specimens."—Syme *Eng. Bot.* x., 100.

2610. CAREX BRIZOIDES L.

Holland, Belgium, Germany, Schleswig, France, Switzerland, N. Italy, etc., Nym. *Consp.* 779.

"Studley Wood, Yorkshire, Mr W. MacIvor."—Bab. *Man.* 339, 1851. "Not found lately. Introduced?"—Bab. *Man.* 389, 1874.

If it really were found there it has probably been planted."—Syme *Eng. Bot.* x., 175. See Lees *Fl. W. Yorks*, 461.

2622. CAREX LIGERICA Gay in Ann. Sc. Nat. 2, ser. x., 360, 1838.

"St. Mary's, Scilly Isles, J. Cunnack, 1878."—Arth. Bennett in Kükenthal *Mon.* 139 and *Journ. Bot.* 27, 1884. Named by Boeckler. The specimens in my herbarium are *C. arenaria*, var. *remota* Marss.

2630. CAREX CAESPITOSA L.

C. Drejeri Lange.

S. Norway, Sweden, Denmark, Finland, Germany, Holland, Bohemia, Silesia, Galicia, Transylvania, Montenegro, Russia, Nym. *Consp.* 777.

Owing to mistakes in synonymy this plant was included in our Floras, but it may be referred to *C. Goodenowii* Gay. "Incogn. Though one [specimen] alleged by Fries to have been received as British—indirectly I presume through the Bot. Soc. of Edinburgh: and if so, of course, liable to the suspicion which unfortunately must be attached on no slender grounds to labels issued from that society." —*Cyb. Brit.* iii., 112. "Probably a mistake."—*Comp. Cyb.* 589. See Syme *Eng. Bot.* x., 175. "I have this year gathered *C. caespitosa* in Shetland."—W. H. Beeby in *Scot. Nat.* 184, 1887. "W. side of the loch of Cliff, 'is, as I think, rightly named,' Dr. Lange."—Beeby, *l.c.*, 217, 1887. Yorkshire, Mr J. Pickard, teste Mr Arth. Bennett. Both require confirmation, as the Shetland specimens are said to be a form of *C. Goodenowii* and the Yorkshire ones are to be refound.

2669. STIPA PENNATA L. *Eng. Bot.* t. 1356, 1804, from a garden specimen.

Spain, France, Germany, Switzerland, Italy, etc., Nym. *Consp.* 805.

"*Gramen sparteum pennatum.* C. B. Pin. 5. Found by Dr Richardson, in company with Tho. Lawson, on the Limestone Rocks hanging over a little valley call'd Long Sleadale, about six miles north of Kendale in Westmorland."—Ray *Syn.* ed. 3, 393. *Stipa pennata*, as above. Huds. *Fl. Ang.* 24, 1762. "Rombalds Moor, York, S. Gibson 1839."—Baines *Flora* 1842. "I have wild specimens gathered in Westmorland by the late J. Gough, of Kendal: and having these I did not keep, but gave away the specimens I had sent me from Rumbolds Moor by S. Gibson; it grew near the pathway between Ilkley and Keighley, and I have no reason to doubt its correctness. Tatham, 1845, in *lit.* to H. C. Watson."—*Comp. Cyb.* 593, 1870. "Specimen in Herb. Sowerby labelled 'Grimwood Garden'."—Garry *Notes* 260. "Kenwood, cult. in the garden there?" —*Fl. Middlesex* 316. Leeds road, Huddersfield, on shoddy waste."—Ingle in *Hudd. Nat. Hist.* 1857. Long Sleadale has often been searched for this grass which when mature is conspicuous enough. Probably Richardson brought home some root of a narrow-leaved *Festuca* to his garden where *Stipa* was afterwards mistaken for it. "Ken (Caen) Wood, Hampstead (an impossible station); Rumbald's Moor, by S. Gibson (an unreliable authority). Long Sleadale . . . (from a garden?) . . . no doubt there has been some error or imposition in saying it occurred wild in England."—Syme *Eng. Bot.* xi., 200.

2671. MILIUM VERNALE Bieb. Fl. Taur. Cauc. i., 53.

First recorded as *Milium scabrum* Merl., and said to have been found at the lower part of precipitous cliffs near Petit Bot Bay on April 17, 1899, by Mr C. Andrews. See *Journ. Bot.* 33, 1900, and *Flora of Guernsey* 195, 1901. It occurs in Dep. La Vendée, etc., France, in Holland, Greece, Caucasus.

I have on five different occasions searched for this plant on the cliffs near Petit Bot, once accompanied by Mr Marquand. One year the slopes had been recently burned, but on none of the visits could a vestige of *Milium* be seen. A small form of *Poa annua* was gathered there in 1906 which Hackel named *conferta.* It is identical with *P. exilis.* Mr Marquand said that Mr Andrews did not remember exactly where he gathered the *Milium* but he had it among other plants in his case after a cliff scramble in that vicinity.

2676. PHLEUM MICHELII All. Fl. Pedem. ii., 233, 1785.

Sm. *Eng. Bot.* t. 2265, 1811.

Dauphiny, Jura, Italian Alps, Sicily, Croatia, Hungary, etc., Nym. *Consp.* 792.

"Discovered by Mr G. Don on rocky parts of the high mountains of Clova, Angusshire. This specimen agrees with authentic . . . ones . . . except in being less luxuriant, owing probably to its more northern, or more barren, place of growth."—Smith, *l.c.* "Lately I discovered three other grasses, new to Britain, viz. the *Avena planoculmis* of Schraeder [*A. alpina*] . . . the *Aira laevigata* [*A. alpina*] and the *Phleum Meichelii*, the *Phalaris alpina* of the German authors:

these grasses grow on the very summit of the highest mountains."—Don *Account* 212. "No one has succeeded in verifying Don's discovery, the specimens given by him were cultivated ones."—Hook. and Arnott *Br. Fl.* 533, 1850. "Incogn. Can it be the *Alopecurus alpestris* [*A. alpinus*, var. *Watsoni*]? The figure in *E.B.* . . . bears that first-glance resemblance to [it], which may suggest the possibility of Don having seen the one, and somehow substituted the other for it."—*Cyb. Brit* iii., 157-8. "Error."—*Comp. Cyb.* 592. "Found by no one else."—Syme *Eng. Bot.* xi., 199.

Don's own herbarium contains *Phleum Michelii* which he says he discovered on the Clova Mountains in 1808, but rare. The specimens are 24 inches high and are probably from his garden, therefore Watson's suggestion is untenable. Lady Aylesford painted her picture from a dry specimen supplied by Don.

2716. TRISETUM SPICATUM (L.) as *Aira*.

T. subspicatum Beauv. Agrost. 88. *Avena subspicata* Clairv. Man. Herb. 17. *A. airoides* Koel.

Scandinavia, Iceland, Dauphiny, N. Italy, Pyrenees, etc., Nym. *Consp.* 813.

"In Alpibus Angliae."—Anderss. *Gram. Scand.* 69. "Should be looked for. I cannot obtain any information from Sweden."—Bab. *Man.* 398, 1856. "Unknown."—Syme *Eng. Bot.* xi., 200.

2723. AVENA PLANICULMIS Schrad. Fl. Germ. i., 381. *Eng. Bot. Suppl.* t. 2684.

Carinthia, Styria, Silesia, Hungary, Moravia, Transylvania, Serbia, Herzegovina, Nym. *Consp.* 810.

"On the ascent of Goatfell in Glen Sannox in the Isle of Arran, Mr Stewart Murray."—Hooker in *E.B. Suppl., l.c.* "The name of this species was applied to a plant which was cultivated in the Botanic garden at Glasgow and which Mr Stewart Murray believed he had brought from Glen Sannox [vide supra]. . . . Errors are constantly arising in large collections by the transpositions of labels, or by the death of one species and the appearance of another in its place from seed accidentally reaching that precise spot."—*Cyb. Brit.* iii., 187. "Error."—*Comp. Cyb.* 594. "Dr. Balfour and others have searched for it there in vain."—Syme *Eng. Bot.* xi., 200.

The Forfarshire *A. planiculmis* of Don, "from a rock in the Clova mountains," is *A. alpina.* The *Eng. Bot.* plate is from a garden specimen.

2766. POA STRICTA Lindberg in Bot. Not. 10, 1856.

P. laxa, sub-sp. *stricta* Syme Eng. Bot. xi., 116, t. 1763.

Lochnagar, Lochan-an-ean, Ben Nevis. Babington. I refer the Lochnagar plants, with Professor Hackel's approval, to *P. alpina*, var *acutifolia.*

P. stricta Lindenberg yet awaits discovery in Britain. It is a very northern species, Jemtra, Dovrefeld and Spitzbergen.

2787. FESTUCA AMETHYSTINA L.

"In Italia, Gallia, Anglia."—L. *Sp. Pl.* 109, 1763.

Nothing further is known. Not likely to be British as it is a plant of Eastern Europe with its western limit in Switzerland.

2833. AGROPYRON CRISTATUM J. Gaertn. in Nov. Comm. Petrop. xiv., 540, 1770.

Triticum cristatum Eng. Bot. t. 2267, 1811.

Russia, Bulgaria, Thracia, Roumania, Hungary, E. Europe, etc., Nym. *Consp.* 842.

"Discovered on steep banks and rocks by the sea-side between Arbroath and Montrose, flowering very sparingly."—*Eng. Bot.*, *l.c.* "Incogn. Mr N. J. Winch gave me a specimen said to have been received from Don, and localised by its label, on the sands of Barrie. In a letter from Sir W. C. Trevelyan, dated Aug. 19, 1839, he remarks that *T. cristatum* was then 'abundant in Lunan Bay, near Arbroath' [which is between that town and Montrose], but in 1848 Mr Gardiner asserted in his *Flora of Forfarshire* that Don 'alone has found it.' On which side is the error?"—*Cyb. Brit.* iii., 237. "Ambiguity. Specimens from Don are in Herbaria."—*Comp Cyb.* 597.

Lady Aylesford painted one of Don's dried specimens, which is now in my Herbarium. It is localised as above. Probably it was originally introduced with eastern grain. As an adventive plant it has recently occurred in Britain.

2860. JUNIPERUS SABINA L.

Spain, France, Switzerland, Italy, Tyrol, etc., Nym. *Consp.* 676.

Recorded by Dr. Molyneux (*Phil. Trans.* n. 227) to have been found by an apothecary on one of the islands of Lough Lane, Killarney. See *Cyb. Hib.* 276. Edward Lhwyd, writing to Tancred

Robinson in 1699, says "I doubt my friend, whom I sent to Kerie, will bring me no news of it," so that he had a pretty shrewd idea that a mistake had been made. "Doubtless it was a form of *Juniperus communis*."—Syme *Eng. Bot* viii., 285.

2874. EQUISETUM RAMOSISSIMUM Desf. Fl. Atl. ii., 398, 1800.
E. ramosum DC.

Portugal, Spain, France, Germany, Switzerland, Italy, E. Europe, etc., Nym. *Consp.* 860.

"Said by Schkuhr to grow in Wales, but no authority is given. It occurs in the west of France, as far north as the valley of the Loire."—Syme *Eng. Bot.* xii., 172.

2878. LOMARIA ALPINA Sprengel = *Blechnum alpinum.*

"In the crevices of an old stone wall, by the side of a mountain torrent not far from Loch Tay, Perthshire, 1856."—G. B. Wollaston in *Phyt.* 157, 1859. "Doubtless an error."—Syme *Eng. Bot.* xii., 148. But Mr Wollaston only saw a single specimen growing in a garden to which its owner said she had brought the fern from the locality mentioned. Doubtless a confusion with a garden plant.

2880. ASPLENIUM REFRACTUM Moore Nat. Print. Brit. Ferns, 8vo. ed., ii., 66.

Only known in cultivation. First observed at Peper-Harow Park, in the gardens, 1851. The three roots were said to have been found in Scotland a few years previously. See Syme *Eng. Bot.* xii., 148.

2918. BOTRYCHIUM RUTACEUM Sw. in Schrad. Journ. ii., 110, 1800.
B matricariaefolium A. Br.

Scandinavia, Germany, Switzerland, Italy, E. Europe. See Nym. *Consp.* See Doody *Syn.* ii., *App.* 340.

"*Lunaria botrytis minor pinnulis laciniatis.* Westmorland. Dr. Lawson?"—Ray *Syn.* 129, 1724. Sandy sea-shore, Stevenston, Ayrshire, Dr. O. St. Brody, ex W. Whitwell in *Journ. Bot.* 291, 1898. See Syme *Eng. Bot.* xii., 27. See also Sm. *Eng. Fl.* iv., 329.

Confirmation is highly desirable.

2918. BOTRYCHIUM LANCEOLATUM Angstrom.

Norway, Sweden, Arctic region.

"*L. minor foliis dissectis.*"—Ray *Syn.* ? Westmorland, D. Lawson, Doody in Ray *Syn. App.* 340, 1696. Sands of Barry, Forfar, Cruickshank, 1839. "Three specimens all exactly alike except a small difference in size and I could find none of the other sort growing near them."—Newman *Hist. of Brit. Ferns* 347, 1844 and ed. 3, 320-4, 1854, as *B. rutaceum.* "Side of the lake at Hornsea [Mere, Yorks], Mr. Teesdale."—*Bot. Guide*, ii., 720, 1805. See Syme *Eng. Bot.* xii., 28. This or *B. Lunaria*, var. *incisum* is said to have been gathered near St. Mary's Loch, Selkirk. I have made three unsuccessful searches.

The synonymy of the two species is very confused.

2927. LYCOPODIUM CHAMAECYPARISSUS A. Braun.

L. complanatum, var. *Chamaecyparissus* Döll Fl. Bad. 80. *L. complanatum*, sub-sp. *Chamaecyparissus* A. and G. Fl. Mitt.-Eur. i., 156.

Denmark, Sweden, N. and W. Germany, Holland, Belgium, France, Switzerland, etc.

Ingleborough Hill, 1816, H.S. in *Herb. Charles Bailey.* See Druce in *Rep. B.E.C.* 222, 1915.

2929. AZOLLA CAROLINIANA Willd. Sp. Pl. v., 541, 1810.

Central America, etc.

First record: Pindon, Middlesex, *Science Gossip* 1883. Since reported from Norfolk, Bucks, Berks, Oxon, Co. Cork, etc. All the specimens which have reached the fruiting stage in Britain appear to be *A. filiculoides.* Therefore the occurrence of *A. caroliniana* in Britain is at present dubious.

2932. SELAGINELLA HELVETICA Link Sp. Hort. Berol. 159.

Belgium, Germany, France, N. Italy, etc.

"Lycopodioides simili ratione differt a Lycopodio, qua Selaginoides a Selagine. Hujus una tantum species adhuc innotuit, nempe Muscus denticulatus major C.B. cum quo idem est Muscus denticulatus mino ejusd. Quem licet Lobelius Somersetiae sterilibus montibus, Mendip vocatis, ubi plumbum effoditur, nonnumquam magna copia provenire memoriae proditum reliquerit, nemo tamen post eum nec ibi, nec aliis locis hunc Muscum in Anglia adhuc observavit. Nec loca a Merreto in Pina. p. 80 memorata huic Musco competunt, sed alii procul dubio speciei, quam pro hac perperam habuit. *Lobel* 1570."—Ray *Syn.* 21, 332, 1696. "July 15, 1726. About the lead mines on Mendipp Hill we searched for the Muscus denticulatus Clusii mentioned by Lobel to grow there, but found nothing more than common Mosses, vis. *Hypnum* foliis triangulis majoribus et minoribus, which its likely Lobelius mistook for Clusius his, the Mendipp Hills being of a large extent we might not hit on the true place and perhaps the ground hath been alter'd since that time, so that I would not deny Lobel's veracity."—Dillenius MS. See *Dill. Herb.* xiv., and *Hist. Musc.* 464, 1741. "Thames side at the Neathouses and Kingsbridge, Middlesex."—Merrett *Pinax* 1666. Error. See note by Rev. W. W. Spicer in *Phyt.* iv., 384, 1851 and *Cyb. Brit.* iii., 298, but it may be added there is not the slightest evidence to show that any of the specimens he referred to were gathered in Britain. See also *Corresp. of Linneaus and other Naturalists* ii., 134 ; *Cyb. Brit.* iii., 298.

The foregoing account of the Dubious Plants is avowedly incomplete, and additional information will be gladly welcomed.

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LONDON:

Humphrey Milford, Oxford University Press, Amen Corner, E.C.4.

THE BOTANICAL SOCIETY AND EXCHANGE CLUB OF THE BRITISH ISLES.

REPORT FOR 1919

OF THE

BOTANICAL EXCHANGE CLUB

(CONVENIENTLY ABBREVIATED REP. B.E.C.)

BY THE

EDITOR AND DISTRIBUTOR,

JAS. W. WHITE, F.L.S.

VOL. V. PART VI.

PUBLISHED BY
T. BUNCLE & CO., MARKET PLACE, ARBROATH.
October 1920.

PRICE 3s 6d.

REPORT OF THE DISTRIBUTOR FOR 1919.

On taking up this office once more after the lapse of years, and noting the parcels sent in to be dealt with, the Distributor is sadly reminded of the Club's heavy losses in the interval. Several of the more prominent supporters have departed this life; others are no longer able to work; their valued opinions and typical specimens have ceased to come in; and as a body we are appreciably poorer. Such trials are, however, inevitable in the life of any Society. It remains for those who survive to raise the standard of their output, where practicable, to a still higher level. Fortunately we have yet with us members who yearly send out for exchange examples of the best description. Their plants, collected in reasonable quantity, are carefully pressed, well dried and placed on decent paper of even size. Their labels are not scrawled on odd bits of used stationery, nor typed with tinted dyes that fade, but are neatly written in ink on printed blanks. They even take the trouble to put the several species into separate covers and to furnish a list of their contributions arranged in order of the *London Catalogue*. In short, they bear in mind the rules of their Club, and the toil of Distributors and Referees. One of the latter, moved by the poorness of material on which he was asked to report, gives vent to his irritation in the following outburst :—

> " 'Tis a thankless job with never a root,
> And lacking as much as a half-ripe fruit,
> To tack on a name—in fact it's a shame
> To expect a chap with a book and a lens
> To identify rubbish that naebody kens!"

There is surely nothing about a botanical hobby that directly leads on to indifference and carelessness, so we will hope that our weakly ones may mend their methods and eventually produce specimens worthy of a place in herbaria—good enough to serve in turn as object lessons for recruits in the future.

Thirty-six members have contributed 6257 sheets, representing 422 gatherings. To this total the Distributor has added 1190 of his duplicates in an effort to fill the gaps shewn in a number of marked catalogues. The main divisions of Phanerogams (if the *Floridæ* be excepted) are well represented, although there is a decided falling off in the more difficult genera. A larger assortment of Roses, Mints, and Willows would have been welcome. Members are indebted for dried seedlings to Dr Druce and Messrs Brown, Wade and Waterfall; and to Mr Bickham for 80 packets of seeds. A special mention, too, is deserved by Mr Bickham's splendid series (from his garden) of the Steep Holm Pæony, so difficult to obtain from its native fastness in the Bristol Channel.

Contributors will do well to remember that at least ten sheets of a gathering should be prepared for exchange. As was lately pointed out by Mr Barton, comments in the *Report* are of little use to members who have not received the plants. For that reason the present Editor omits all mention of those contributions that comprise less than six examples.

For help in the determination of doubtful specimens the Club is deeply thankful to the referees whose names appear in the *Report* attached to the notes they have written. And the Distributor gratefully acknowledges the assistance given him by Miss Roper in carrying through the work at considerable inconvenience to herself.

JAS. W. WHITE.

18 Woodland Road,
Clifton, Bristol.

LIST OF PARCELS RECEIVED.

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Clematis Vitalba L. [2124]. West Horsley, Surrey, v.-c. 17, July 23, 1919. A form, hairier than usual, with small entire leaflets.—C. E. BRITTON. "A weak, diminutive state with no marked distinctive character. We have a similar plant from La Turbie, above Monte Carlo."—BUCKNALL & WHITE. "It is the var. *integrata* DC."—DRUCE & SALMON.

Ranunculus trichophyllus Chaix. Pond on hill above Hamilton, Leics., May 7, 1916.—A. R. HORWOOD. "Rightly named, but too young, no fruit, and only one flower."—PEARSALL.

R. [*trichophyllus* Chaix]. Langenhoe marshes, N. Essex, May 11, 1919.—G. C. BROWN. "Is *R. heterophyllus* Weber, var. *submersus* Bab.'—PEARSALL. "Very young, but is undoubtedly the var. or hybrid."—WHITE.

R. [*trichophyllus* Chaix, var. *radians* (Revel)]. Hamilton, Leics., May 19, 1915.—A. R. HORWOOD. "Not *radians*, but probably *R. heterophyllus* Weber, var. *triphyllus* Hiern; poor material, no flrs., only one head of immature carpels, and the floating leaves mostly doubled up."—PEARSALL. "Yes, *triphyllus*, I believe."—WHITE. "I think this comes under *radians* and is best placed as a variety of *heterophyllus*; this plant is quite unlike *R. trichophyllus* to my eye."—SALMON.

R. heterophyllus Weber. [1402]. Dyke, Langenhoe marshes, N. Essex, v.-c. 19, May 11, 1919.—G. C. BROWN. "Probably right, but no fruit, and only one flower."—PEARSALL.

R. Baudotii Godr. [1422]. Dyke, E. Donyland marshes, N. Essex, v.-c. 19, May 28, 1919.—G. C. BROWN. "Well prepared, typical specimens."—PEARSALL.

Ranunculus ——? Ditch near the lighthouse, Leasowe, Cheshire, v.-c. 58, May 31, 1919.—W. G. TRAVIS. "Very acceptable specimens of *R. Baudotii*, f. *confusus*."—PEARSALL.

Páeonia corallina Retz. Origin, Steep Holm Island; cult. Ledbury, May 28, 1919. Owing to the dryness of the Spring I have been able to make very good specimens: the stamens often mildew in drying.—S. H. BICKHAM. "*Peregrina*, not *corallina*."—WHITE.

Papaver Rhoeas L., var. [Q. 761]. Wootton, Berks, July, 1919. This seems to be the var. *Hoffmannianum* Kuntze. The leaf-cutting is unusual and fairly constant: the petals are black-spotted at the base with often a whitish margin to the spots.—G. C. DRUCE.

Fumaria muralis Sond., subsp. *Boraei* Jord. [309 A]. Rough open ground, Brendon, N. Devon, v.-c. 4, August 13, 1917.—W. C. Barton. " This seems to differ slightly from [309 B] and [309 C] in that the bracts are longer, the sepals a little larger and the fruit relatively longer. It is perhaps simply a variant, but I should not apply the varietal name *britannica* to it, as it is not typical and should prefer to leave it under *F. muralis*, subsp. *Boraei.* I notice that the fruits of all these plants tend to show a small apiculus : I have seen this in other N. Devon and N. Somerset examples of var. *britannica.*"—Pugsley.

F. officinalis L., var. *Wirtgeni* Hausskn. Cornfield, Keynsham, N. Somerset, v.-c. 6, May 20, 1918.—Ida M. Roper. " Yes; but fruit a little broader than in some forms. A good set."—Pugsley.

F. parviflora Lam., var. *acuminata* Clav. Barton Hills, Beds. v.-c. 30, July 13, 1918. In quantity on bare chalk on the scarp of the hill; absent on the top where capped with glacial loam. Growing with it were *F. officinalis*, var. *Wirtgeni* Hausskn. (det. H. W. Pugsley) and *F. micrantha* Lag.—J. E. Little. "Yes; a fine set of specimens."—Pugsley.

F. [*Vaillantii* Lois.]. Waste ground, Limpsfield, Surrey, July 1, 1913. And another Fumitory, a garden weed at Putney, July, 1919.—H. E. Fox. " We consider both gatherings to be forms of *officinalis* and not of *Vaillantii.* They differ in the truncate or retuse fruit and in their large sepals nearly 2 mm. long."—Bucknall & White. " Both are depauperate *officinalis* without flowers and showing scarcely any fruit. Quite worthless."—Pugsley.

Radicula islandica Druce = *R. palustris* Moench, var. *microcarpa* = *Roripa palustris* Bess., β *microcarpa* Beck *Fl. N. Œsterr.* p. 466 = *Roripa palustris* Bess., " forme " *arvensis* Rouy & Foucaud *Fl. de Fr.* ii., p. 194. [2162]. West Barnes, Merton, Surrey, v.-c. 17, Sept. 14, 1919. This differs from the common form of the species by its shorter and stouter pods each with a more prominent style. Though the specimens distributed were taken from a plant occurring as a garden weed this variety is probably not infrequent in localities less moist than are the situations favoured by the species. All the examples sent are not of equal maturity, therefore there may be an apparent want of complete agreement with the descriptions of Beck and Rouy & Foucaud. With the fully mature fruits before one, however, there is seen to be the closest resemblance to the descriptions of these authors. Beck describes his variety as differing from the type in possessing pods more elliptical, at the most 4 mm. long, shorter, or as long as their stalks, with the style 0.5-0.7 mm. long. The French authors grade their plant as a " forme," a term for which Rouy afterwards substituted the term "race." In giving this rank, Rouy & Foucaud regarded their plant as being of more than varietal importance, but English botanists will probably prefer to treat the plant as a variety only. As with Beck, Rouy & Foucaud distinguish their plant solely by the fruit differing from the type in being smaller (4-5 mm. long) and elliptical. The style in the type is described as almost absent, and, in the "forme," longer than usual. In the specimens distributed, the style at times reaches the length of 1 mm.—C. E. BRITTON.

Barbarea ——? Luffenham, Rutland, June 15, 1916.—A. R. HORWOOD. "Although the young pods show a tendency to arcuation, the plant is most probably a *vulgaris* form. The specimens are undeveloped."—BUCKNALL & WHITE. "This is the var. *arcuata* Rchb."—TRAVIS.

B. vulgaris R. Br. By Max Mill, Winscombe, N. Somerset, v.-c. 6, June 21, 1919.—IDA M. ROPER. "Approaches var. *arcuata* but is not typical, being intermediate between that and the var. *campestris*. See *Journ. Bot.* 207, 1916."—JACKSON.

B. arcuata Rchb.? Near Monmouth, June, 1919. Seen also by roadsides in Hereford, Carmarthen and Brecon.—G. C. DRUCE. "Not one of the best examples of *arcuata*, perhaps, as it shades a little towards var. *campestris* of *vulgaris*."—WHITE.

B. vulgaris [R. Br.] Ait., var. *arcuata* Fr., subvar. *brachycarpa* A. B. Jackson. Determined by Mr Jackson. Wymondley Road, Hitchin, Herts, August 20, 1919. This one plant, from which specimens were distributed in 1917 and 1918, has produced pods for the third year in succession, and is putting out radical leaves for a fourth season.—J. E. LITTLE. "The fig. (tab. 121) of *arcuata* in Syme *E. B.* is a much better representation of *brachycarpa*."—WHITE.

Malcolmia maritima Br. Naturalised on a shingly beach, Kingsdown, Kent, March 30, 1918.—H. E. FOX. "Yes. Although found in Kent at some former time (Bab. *Man.*) it was unknown to the authors of the county *Flora*."—WHITE. "This favourite garden annual, native of the sea-coasts of Southern Europe, has frequently been noticed as an escape in Britain."—Dunn's *Alien Flora*. Nyman observes "Planta culta (quæ in hbb. sæpe obvia) gracilior, glabrior."

Arabis perfoliata Lam. Gerard's Cross, Bucks, May 30, 1919. —ALFRED WEBSTER. "Immature, but seeds in two rows and stem clothed with forked hairs at the base as described by Syme."—White.

Erophila majuscula Jord. Edge of footpath, Arncliffe, Upper Wharfedale, W. Yorks, May 23, 1913.—C. Waterfall. "Correct."—Bucknall & White.

E. affinis Jord.? Hedgebank, Elmstead, N. Essex, v.-c. 19, May 1, 1919. Hairs bifid; pet. at first white then pale violet; l. tinged violet; silicules 6 by 2-2.25 mm.; seeds 18-20 in each loculus.—G. C. Brown. "We would rather put this to *E. majuscula*."—Bucknall & White.

E. propinqua Jord.? Bank, Alphamstone, N. Essex, v.-c. 19, April 6, 1919. Hairs mostly trifid; flowers about 3.5 mm. diam.; l. narrow, some sparingly toothed; silicules 6-6.5 by 2-2.5 mm.; seeds averaging 25 in each loculus.—G. C. Brown. "This runs down readily to *E. leptophylla* Jord. and we see no reason for differentiating further. The description of *propinqua* by Rouy & Foucaud is insufficient, and the name does not occur in the *Diagnoses*."—Bucknall & White.

Erophila ——? On cinders, Grove Mill, Hitchin, Herts., April 28, 1913. Pubescence of l. simple, bi-tri-quadri-fid, or branched from base; laminæ hairy above, nearly glabrous below; silicules 4 by 2 to 5 by 2.5 mm., tapering slightly towards either end.—J. E. Little. "Nearest to *E. brevifolia* Jord. *Diagn.* p. 243. By Rouy & Foucaud it would be placed under *E. majuscula* although the stems seem to be decumbent."—Bucknall and White.

Cochlearia alpina Wats. Edge of Foxup Beck, Upper Wharfedale, West Yorks, v.-c. 64, May 21, 1918. At 1700 ft.—C. Waterfall.

Capsella Bursa-pastoris Medic, f. *auriculata*, forma nova. Chipping Campden, E. Glouc., May 27, 1916. Planta altissima, satis rigida; folia auriculata, lata, fere multa; silicula ut in f. *stenocarpa*.—A. R. Horwood. "This has been published by request. But as regards other spp. contributed by Messrs Adamson, Britton and Horwood, it is suggested that as Prof. E. Almquist is at present engaged on a study of the British Capsellas it may be well, pending the result of his examination and culture of our native forms, to withhold all criticism."—White. "Yes, I quite agree that it will be better to wait than to indulge in mere guessing on inadequate data. We hope to have Almquist's notes in next *Report*."—Druce.

Lepidium latifolium L. Ditches on marshes by the Severn Sea, Westbury, West Glouc., v.-c. 34, Sept. 13, 1919. Looking quite native. I know no reason for suspecting the species to be an introduction here.—H. J. RIDDELSDELL.

L. Draba L. Botley, Oxford, July, 1919. This comes under forma *viridescens* Druce in *Rep. B.E.C.* 402, 1916. The leaves are almost free from tomentum.—G. C. DRUCE.

Reseda——? Railway embankment and siding, Buildwas, Salop, June 7, 1919. I sent this plant to the Club from the same locality a few years ago, but no definite conclusion respecting it was arrived at. Is it by any chance *R. gracilis* Tenore?—J. C. MELVILL. "After careful comparison we consider this to be a slender, graceful form of the very variable *R. lutea* L., in the direction of *R. gracilis* but not that. It does not precisely match either of the named varieties."—BUCKNALL and WHITE. "Is var. *longifolia* Ten. according to Thellung."—DRUCE.

Helianthemum polifolium Mill. Daddy Hole Plain, Torquay, S. Devon, v.-c. 3, May 12, 1919.—C. WATERFALL.

H. Breweri Planch. Hort., Bangor; seeds from Holyhead, July, 1919.—J. E. GRIFFITH.

Viola odorata L., var. *subcarnea*. Hedgebank, Moulton, Cambs., April 8, 1919. Coll. Miss Wellsman; comm. F. ROBINSON. "The colour of flower is well retained in these examples of *subcarnea*, but it is a pity to send out sheets with leaves only."—GREGORY.

V. [*odorata* × *hirta*]. Stambourne, N. Essex, v.-c. 19, April 18, 1919. Flower bluish-purple with white eye; spur lighter.—G. C. BROWN. "I see no sign of hybridity in these plants. The direction of hairs is spreading as in *V. hirta*, of which I should name it var. *propera* with small leaves and large flowers."—GREGORY.

V. hirta L., var. *Foudrasi* Jord. Chalk bank, Saffron Walden, N. Essex, v.-c. 19, April 18, 1919. Flowers very small, light blue; leaves less hairy than in type; some stipules gland-ciliate.—G. C. BROWN. "Yes, correctly named; but the plants are too much broken to show their beauty."—GREGORY.

V. Riviniana Rchb., var. *diversa* Greg. [1405]. Danbury Common, S. Essex, v.-c. 18, May 8, 1919.—G. C. BROWN. "Rightly named, but poor and scanty examples."—GREGORY. Upon another gathering [1406] from Fordham Heath, N. Essex, v.-c.

19, May 5, and August 14, 1919, which Mr Brown evidently considered to be identical with a former contribution (see *Rep. B.E.C.* 559, 1916) Mrs Gregory reports:—" These are good examples, in two stages, of *V. Riviniana* f. *minor*. Habit, texture and stipules all point to f. *minor* rather than to var. *diversa*."

V. Riviniana Rchb., var. *diversa* Greg. Long Spinney, Scraptoft, Leics., May 7, 1916. Col. A. R. Horwood; comm. A. E. Wade. " Yes; in the early stage. Needs at least one later gathering."—Gregory.

V. Riviniana Rchb., f. *minor* Murb. ined. [1370]. Autumn stage. Failand, near Bristol, N. Somerset, v.-c. 6, October 4, 1919.—Ida M. Roper. " Right."—Gregory.

V. canina L., var. *lanceolata* Mart.-Don. Menmarch, Oxon., locus classicus, June, 1919.—G. C. Druce. " Yes."—Gregory.

V. lactea Sm. Mead End, Hordle, Hants. Near the sea in damp peaty ground among gorse and heather, June, 1918.—J. C. Melvill. " If the flowers had been placed between wads of thick paper and the drying paper, when first put into press, a better result would have been obtained."—Gregory.

V. arvensis Murr., var. *agrestis* Jord. Allotments, Groby Road, Leicester, v.-c. 55, August, 1919.—A. E. Wade.

V. arvensis Murr., f. *Déséglisei* Jord. Hall Road, South Lancs., v.-c. 59, September 8, 1919.—W. G. Travis.

V. arvensis Murr., var. *obtusifolia* Jord. Sand dunes, Formby, S. Lancs., v.-c. 59, June, 1918.—J. A. Wheldon. " No; *ruralis*." —Drabble.

V. ——? Allotments, Bumpas Lane, Sealand Road, Chester, v.-c. 58, September 5, 1917.—C. Waterfall.

V. ——? [381]. Highest part of dry heath, Croxton, W. Norfolk, v.-c. 28, May 16, 1918. I have never seen anything like this in Norfolk before; it covers the highest and driest part of the heath. —F. Robinson. " *V. Pesneaui*. I have previously seen *Curtisii* pansies from this district. There does not seem any reason why they should not occur anywhere in deep sand; maritime conditions are probably unnecessary."—Drabble.

V. lutea Huds. Beoska Moor, Upper Wharfedale, W. Yorks, v.-c. 64, alt. 1700 ft., May, 1918. And from upland moors, Llandrindod Wells, v.-c. 43, June 2, 1919.—C. Waterfall.

V. lutea Huds., var. *amœna* Symons. Upland Moors, Llandrindod Wells, v.-c. 43, June 4, 1919.—C. Waterfall.

Polygala austriaca Crantz. Wye, Kent, June, 1919.—G. C. Druce. "Typical Kentish specimens which differ from the Grassington plant in the less condensed habit, shape of leaves, and smaller flowers more scattered on the stem. Prof. Chodat, in a second letter to me, again names the Grassington milkwort *P. amarella* Crantz (*P. amara* auct. vet., non Jacq.)."—Cryer.

Cerastium tetrandrum Curt. Sandy shore, E. Mersea, N. Essex, v.-c. 19, May 11, 1919.—G. C. Brown. "Yes."—Druce & Pearsall.

C. tetrandrum Curt. Sandhills, Meols, Cheshire, May 31, 1919. —W. G. Travis. "I agree."—Salmon.

Cerastium —— ? Sandy heath, Thetford, v.-c. 28, June 29, 1919.—F. Robinson. "*C. semidecandrum* L., very glandular and closely tufted. Calyx and capsule smaller than in var. *congestum* C. E. Salmon (*Journ. Bot.* 17, 1913)."—Bucknall & White. "Yes: a slender and rather short-capsuled form of var. *glandulosum* Koch."—Druce & Salmon.

C. viscosum L. Roadside near Ledbury, v.-c. 36, June 4, 1919. And var. *apetalum* Dum. from rough ground in the same district, June 7, 1919.—S. H. Bickham. "Excellent specimens, well worthy of distribution."—White.

C. triviale Link, var. *hirsutum* Fr. On broken limestone, Castleton, Derbyshire, August 17, 1919.—R. S. Adamson. "Being hairy, not at all glandular, and with narrow leaves, this should be *C. vulgatum*, var. *typicum* Beck (*Fl. N. Oesterr.*), but is too young to show the shorter capsule specified in the description. As we have a similar plant from Scotland it is probably the northern form in Britain of a very variable species."—Bucknall and White. "Yes; in fact the typical form. Fries divided the species into α *hirsutum* and β *Holosteoides* the rarer more glabrous plant."—Salmon. "True: Fries (*Novitiæ Fl. Suec.* 125, 1828) localises *hirsutum* 'in locis siccioribus, ubique,' evidently meaning the common form of *C. vulgatum* L. Fries goes on to show that the Linnean name *vulgatum* is correctly applied to this species. It follows, therefore, that if Mr Adamson places his plant (in a sense accurately) under *triviale* Fries' name should be in brackets. I myself prefer to retain the name *vulgatum* under which Fries put his *hirsutum*. The Castleton plant, however, is not the common form, but is one which occurs on limestone soils in various parts of Britain."—Druce.

Stellaria aquatica Scop. Bank of river Alyn, Denbighshire, N. Wales, v.-c. 50, August 13, 1918.—C. WATERFALL. "My specimen comes under var. *scandens* Godr., with leaves slightly cordate."—PEARSALL.

S. apetala Ucria. Walls, Wigginton, v.-c. 23, May 30, 1919. This appears to me to be the same plant as occurs on sand-dunes in Glamorgan and elsewhere, named as above. The contrast of foliage-colour with *S. media* was as marked here as there.—H. J. RIDDELSDELL. "Yes; under the microscope the tuberculation of seeds is identical with our dune plant, and there is no difference in any other feature than the slightly more elongate internodes of the stem."—WHELDON. "I think correct. Many of the flowers show abortive petals, 2 or 3 stamens with dark red anthers—or one such and two abortive filaments and occasionally 3 arcuate styles."—PEARSALL. "Yes; *S. Borœana* Jord., I believe."—SALMON.

S. neglecta Weihe. Lanes about Torquay, S. Devon, v.-c. 3, May 27, 1919.—C. WATERFALL. "Yes."—PEARSALL.

S. neglecta Weihe, var. *decipiens* Marshall. Baggrave Park, Leics., May 28, 1916, coll. A. R. HORWOOD, comm. A. E. WADE. Does not Weihe's aggregate cover the *S. umbrosa* Opiz and this hairy plant? Marshall's *decipiens* no doubt refers to the latter.—WADE. "Yes, there are only two forms, *umbrosa* with glabrous pedicels and sepals and acutely tubercled seeds; and *decipiens* with the former organs hairy and seeds with rounded tubercles. For information on the synonymy, priority of names, &c., see *Journ. Bot.*, 151, 1904."—WHITE.

Arenaria tenuifolia L., var. Barton Seagrave, v.-c. 32, June 1918.—GEO. CHESTER. "By the *Manual* this glabrous plant is seen to be the type of the species. In the more minute analysis of Rouy & Foucaud it stands as var. *genuina* Willk. = *Vaillantiana* DC."—BUCKNALL & WHITE. "I agree; a very local plant in Northants."—DRUCE. "Best under type."—PEARSALL and SALMON.

Alsine [*rupicola* Hiern]. Sea rocks, Land's End, Cornwall. July, 1910.—H. E. FOX. "This is *A. rubra* = *Spergularia rubra* Pers. *Lond. Cat.* ed. X. The station is an unusual one."—BUCKNALL and WHITE.

Montia verna Necker. Gravel pit, Gt. Totham, N. Essex, v.-c. 19, May 8, 1919.—G. C. BROWN. "*M. chondrosperma* Fenzl."—SALMON. "*M. verna* Necker is the older name. See *Rep. B.E.C.* 331, 1908."—DRUCE.

Hypericum quadrangulum L. North Leigh, Oxon, September, 1919.—G. C. DRUCE. "Is *H. tetrapterum* Fries. The Linnean name seems too ambiguous to employ for this plant."—SALMON.

H. perforatum L., var., with very obscure dots. Burgh St Margaret, Norfolk, July 15, 1919.—R. J. BURDON. "Although the leaves possibly are rather narrower than usual, my example seems better left under type (*i.e.*, var. *vulgare* Neilr.) rather than under var. *angustifolium* DC., which has leaves still narrower and also narrower sepals, petals and fruit."—SALMON.

Geranium rotundifolium L., f. *Thurstonii* Druce. Cliff, East Looe, Cornwall, May and June, 1919. Coll. E. Thurston; comm. —G. C. DRUCE. See *Report* p. 551.

G. Robertianum L., form with laciniate leaves, growing in shade. Aberystwyth, Cardiganshire, 1919.—T. STEPHENSON. "An interesting variation, of which Mr A. J. Wilmott, who is working on this group, would certainly be glad to receive a full representative example."—WHITE.

G. Robertianum L., subsp. *celticum* Ostenfeld. [222]. Seeds from Ballyvaughan, Co. Clare, 1911; cult. hort. bot. Haun, 1916.—(See *Report* p. 551) C. H. OSTENFELD.

Erodium Botrys Bert. Waste ground, Bradford, v.-c. 64, June 19, 1919. First seen in 1912, and has since spread until this year I counted over a hundred plants. Teste E. G. Baker.—JOHN CRYER.

Staphylea pinnata L. In the grounds near Baldon House, Oxford, in some plenty, but of course planted. *Lilium Martagon*, *Pulmonaria officinalis*, *Ruscus*, and *Iris foetidissima* are also well naturalised here.—G. C. DRUCE.

Ononis reclinata L. Daddy Hole Plain, Torquay, S. Devon, v.-c. 3, May 12, 1919.—C. WATERFALL.

Medicago lupulina L., var. *eriocarpa*. Pasture, Leicester, v.-c. 55, August, 1919.—A. E. WADE. "Rouy did not elevate this to a higher rank than *sub*-variety and quite lofty enough, too! Mr Wade's plant seems to come under Rouy's name."—SALMON.

Trifolium Molinerii Balb. The Lizard, Cornwall, June 12, 1919. —F. ROBINSON.

T. suffocatum L. The Denes, Lowestoft, v.-c. 26, May 30, 1919. —F. ROBINSON.

T. procumbens L., ? var. *majus* Koch. Saxby, Leics., June 17, 1916.—A. R. Horwood. "No, not the variety, just the typical plant."—White.

Lens esculenta Moench = *Ervum Lens* L. From a rubbish-tip, Bristol, West Glouc., v.-c. 34, June 13, 1919.—Ida M. Roper. "Yes, the more correct name is *Lens culinare* Medik, which is earlier. as yet we have not adopted the duplication of the trivial which would make it *Lens Lens* (L.)."—Druce.

Vicia altissima Desf. Spontaneous in my garden at Haymesgarth, Cleeve Hill, near Cheltenham, September 29, 1919.—C. Bailey. "Yes, a native of the south-eastern Mediterranean region. and of rare occurrence in Britain."—White.

V. sepium L., var. or forma *dunensis* Druce. Reay, Caithness. July, 1919.—G. C. Druce. "Just a condensed maritime state, apparently."—White.

Lathyrus palustris L. Muckfleet Ware, Burgh St Margaret, Norfolk, June 30, 1919.—R. J. Burdon.

Spiræa canescens Don. Naturalised in a wood below Causand Beacon, Devon, August, 1919.—H. E. Fox. "This is probably of recent importation ; I do not find it mentioned by Loudon, Gandoger or Druce."—White.

Rubus idaeus L., var. *obtusifolius* (Willd.). Garden weed, Wiginton, v.-c. 23, May 30, 1919.—H. J. Riddelsdell. A curious form of this variety with a remarkably bracteate inflorescence is contributed by the Rev. T. Stephenson from "near Aberystwyth, Cardiganshire." Miss Roper remarks that it seems to be a recognised form of bramble-phyllody. See Masters, *Vegetable Teratology*, p. 279.

R. plicatus Wh. & N. [430]. Open ground near Willeys, Sticklepath, v.-c. 4, August 30, 1919. The whole of my gatherings have been seen by the Rev. H. J. Riddelsdell, and his naming accepted. All specimens under the same reference number were taken from one bush or group of bushes.—W. C. Barton.

R. argenteus Wh. & N. [416, 421, 434, 446]. South Tawton quarries, N. Devon, v.-c. 4, August and September, 1919. Also [395] Belstone, v.-c. 4, August 13, 1919 ("not quite typical"—Riddelsdell).—W. C. Barton.

R. incurvatus Bab. Tackley Copse, v.-c. 23, July 31, 1919. In great quantity and beauty. Not the S. England form described in

Rogers' *Handbook*, p. 27 at bottom, but the Wye Valley form (p. 28). Both these forms occur in East Gloucester. The S. England form was latterly called var. *subcarpinifolius* by Rogers (MS.). N.C.R. for Oxon.—H. J. RIDDELSDELL.

R. Bakeri F. A. Lees. Sheen Common, Surrey, August 13, 1919. —A. B. JACKSON & R. A. ROLFE. "Excellent examples of an interesting plant. It differs in several features from *R. rhamnifolius*, of which it is classed as a sub-species."—WHITE. And from Rodway Hill, Mangotsfield, v.-c. 34, July 25, 1919. Named for me by Mr Riddelsdell, who says that *Bakeri* had been already recorded from the Forest of Dean in West Gloucester. This is, however, an addition to the flora of Bristol.—IDA M. ROPER.

R. calvatus Bloxam. [435]. South Tawton quarries, N. Devon, v.-c. 4, September 2, 1919. Named by Mr A. B. Jackson.—W. C. BARTON. "I do not know *calvatus* and your specimens were gathered very late, but they seem to agree fairly well with description and specimens of *calvatus*, especially in the stem and leaflets. The chief weakness lies in the panicle foliage, a matter, however, of very varying value. I should say *calvatus* and N.C.R."—RIDDELSDELL.

R. thyrsoideus Wimm. South Newington Hill and Swalcliffe Common, v.-c. 23, July and August, 1919.—H. J. RIDDELSDELL.

R. Godroni Lec. & Lam., var. *clivicola* Ley. Several places in the Cotteswolds in E. Gloucester, August, 1919. All at about 800 ft. to 900 ft. The var. earns its name at any rate in v.-c. 33. The only important divergence from description is that the term. lt. in these specimens is rather narrow. Some years ago when I first gathered the var. in E. Gloucester it was quite normal in this respect. —H. J. RIDDELSDELL.

R. lentiginosus Lees. Lyndhurst, S. Hants, v.-c. 11, July 21, 1919.—L. CUMMING. "Mr Cumming's gatherings are authentic." —WHITE.

R. macrophyllus Wh. & N., aggr. Wood, S. Newington Hill, v.-c. 23, July 15, 1919. The stem pieces would do for *Schlechtendalii*; but the panicle, besides being very small and shade-grown, is too narrow for the var. So the gathering must go under the aggregate species.—H. J. RIDDELSDELL.

R. macrophyllus Wh. & N., var. *Schlechtendalii* Weihe. Badby Wood, Northants, v.-c. 32, July 25, 1918.—L. CUMMING.

R. anglosaxonicus Gelert. [428]. South Tawton quarries, N. Devon, v.-c. 4, August 31, 1919.—W. C. BARTON. "Yes: with more of ultra-axillary panicle and the term. lt. longer stalked than usual, but quite good.''—RIDDELSDELL.

R. anglosaxonicus Gelert, var. *raduloides* Rogers. Swalcliffe Common, v.-c. 23, August, 1919. I regard this as good typical *raduloides* and as a first record for Oxfordshire.—H. J. RIDDELSDELL. " Doubtless; but I miss the white-felted undersurfaces of our Bristol plant."—WHITE.

R. radula Weihe, var. *anglicanus* Rogers, teste H. J. R. [433]. South Tawton quarries, N. Devon, v.-c. 4, August 31, 1919.—W. C. BARTON. Also from South Newington and Great Tew, Oxon, v.-c. 23, July and August, 1919. I think undoubtedly right for most of the sheets now sent. N.C.R.—RIDDELSDELL.

R. radula Weihe, var. *echinatoides* Rogers. Ballard's Copse, Heyford, v.-c. 23, June 26 and July 16, 1919. Clearly a *radula* form though not under type; I think better under *echinatoides*, though not good. The hairy stem is matched in some Surrey specimens I have, which Mr Rogers himself placed under the var. The prickles both on stem and panicle make for the var., as do the colouring and the leaf-toothing.—H. J. RIDDELSDELL. Also from Hook Norton, v.-c. 23, July 11 and 26, 1919. Of this plant the stems of the year were much cut: the ternate leaves of July 11 were from the secondary shoots, and the difference in hairiness and armature between them and the primary leaves is worth noting. As with the Ballard's Copse plant, I consider this gathering to be better placed under the var. than under *radula* itself, though not good *echinatoides*.—H. J. RIDDELSDELL.

R. fuscus Wh. & N., var. *nutans* Rogers. Between Lyndhurst and Minstead, S. Hants, v.-c. 11, July 13, 1919.—L. CUMMING.

R. fuscus Wh. & N., var. *macrostachys* P.J.M. Buckholt Wood, Cranham, v.-c. 33, August 19, 1919. Named by Mr Rogers in 1912, when I gathered and distributed the var. from the same bushes. Some of the specimens grew in deeper shade, but on the panicle, at any rate, traces of white-felting on the underleaf are plain.—H. J. RIDDELSDELL.

R. pallidus Wh. & N., var. *leptopetalus* Rogers. Tackley Copse. v.-c. 23, July 31, 1919. When Mr Rogers saw plants from this locality some years ago his final judgment was " *leptopetalus* apparently." The hesitation can be understood on reference to the *Handbook* description. The foliage is yellowish; the panicle branches are less slender and more compact than usual. But I think the differences are not enough to take the form away from var. *leptopetalus*. —H. J. RIDDELSDELL.

R. foliosus Wh. & N. Ilfracombe, v.-c. 4. August, 1918. In great quantity in a wood. Leaves 5-nate as a rule; term. lt. tending to be obovate with coarse and lobate toothing, especially in the larger leaves. Panicle top broader and closer than usual. But undoubtedly *R. foliosus*.—H. J. RIDDELSDELL.

R. rosaceus Wh. & N. Boar's Hill, Oxford, v.-c. 22, July 24, 1918. A form with narrow leaflets. Seen and approved by Mr Rogers.—H. J. RIDDELSDELL.

R. [*rosaceus* Wh. & N.]. Pendale, Perranzabuloe, v.-c. 1, August 23, 1919.—F. RILSTONE. "This is *R. Bloxamianus* Colem., quite typical except in leaf-toothing. It is necessary to warn members that pieces cut from near the base of the stem may be un-radulan in armature, and are not angular in section. Such stem-pieces will reach some members in this distribution. Collectors should avoid the mistake of cutting them. It would be of great help to a referee whose knowledge is very limited if those who send *Rubi* for determination would adhere *as strictly as possible* to the instructions given in Rogers' *Handbook* p. viii. This gathering of Mr Rilstone's was happily sent to me in its entirety; the angular pieces cut from mid-stem gave me a necessary clue."—RIDDELSDELL.

R. hystrix Wh. & N. Ilfracombe, v.-c. 4. August, 1918. These were seen and approved by Mr Rogers.—H. J. RIDDELSDELL.

R. plinthostylus Genev. Roadside near Penballow, Cornwall, v.-c. 1, August 11, 1919.—F. RILSTONE. "Although the stem pieces supplied for distribution are insufficient this agrees very well with Cornish specimens in my possession that were named by the Rev. W. Moyle Rogers."—RIDDELSDELL.

R. Bellardii Wh. & N. Badby Wood, Northants, v.-c. 32, August 12, 1919.—L. CUMMING.

R. dumetorum Weihe, var. Between Willenhall and Binley, Warwickshire, v.-c. 38, September 1, 1919. Mr Riddelsdell says this lies between the vars. *pilosus* and *rubriflorus*, being nearer the latter. I think either would be a record for the vice-co.—L. CUMMING. "So far as one can judge from the material, *rubriflorus* should be agreed to."—WHITE.

Rubus ——? [440]. South Tawton Quarries, N. Devon, v.-c. 4, September 6, 1919.—W. C. BARTON. "? *dumetorum* hybrid."—RIDDELSDELL.

R. Balfourianus Blox. Hook Norton, v.-c. 23, July 26, 1919. This gathering is not so characteristic as that sent last year from Swerford, the stem leaves being particularly *dumetorum*-like in shape; but it is clearly rightly named.—H. J. RIDDELSDELL. Sent also from 12 o'clock Drive, Brandon, Warwickshire, v.-c. 38, August 14, 1919.—L. CUMMING.

?*R. Bucknalli* J. W. White. Ballard's Copse, Heyford, v.-c. 23, June 26 and July 16, 1919. I put this at first to *R. corylifolius* Sm., var. *conjungens* Bab., but maturer consideration leads me to prefer the name *Bucknalli*. The plant covers a big area of rough, bushy ground, and occurs in very small prostrate bushes. The stem is very hairy in the June specimens, besides being slightly acicular, but loses much hair as it matures. The leaves are of *corylifolius* texture, especially the under surface. The panicle is very small and not densely hairy; otherwise it answers to description. Petals very pale pink after drying; white (or nearly so) when fresh. Styles reddish- or brownish-green. On the whole I should say under *R. Bucknalli*, but going off towards *corylifolius*.—H J. RIDDELSDELL. "As indicated by Mr Riddelsdell's hesitation this neat little plant is very difficult to place. It leans somewhat from *corylifolius* towards *Bucknalli*, but we cannot accept it as belonging to the latter. Although we have nothing to match it we believe its position will prove to be intermediate between *corylifolius* and *dumetorum*. It has the dark purple stem with stellate down and scattered glands of *fasciculatus* P.J.M.; the leaflets, too, are imbricate and grey-felted beneath, and the sepals reflexed. From that plant it differs chiefly in the absence of pricklets and small acicles, and in the finer leaf-serration."—BUCKNALL & WHITE.

R. Chamaemorus L. Moorland at about 2000 ft., Penyghent, Upper Wharfdale, W. Yorks, v.-c. 64, May 21, 1918.—C. WATERFALL.

Potentilla norvegica L. Purwell Field, Hitchin, Herts, v.-c. 20, September 10, 1919. In some quantity on land which had been laid down to temporary pasture (rye-grass and lucerne). Two years ago it was broken up for allotments, but a strip was left for a road and on this strip the plant—at least biennial and probably perennial—was found by me this year.—J. E. LITTLE.

P. Anserina L., var. *concolor* Wallr. Side of path in a cultivated field, Beaumont Ley, Leics., v.-c. 55, August, 1919. This form (not so extreme as I have seen it) seemed to be confined to sides of paths in cultivated fields in this locality. Leaves of plants in neighbouring meadows were practically glabrous on the upper surface.—A. E. WADE.

Rosa pomifera Herrm. St Margaret's, Kent, June, 1919, from the same bush as I noticed 18 years ago.—G. C. Druce. "This is correct, but the specimens are very unsatisfactory."—Barclay. "Naturalised. It certainly is not native in S.-E. England, even if it is anywhere in Britain."—Wolley-Dod. Sent also (unnamed) from below the cliffs at Kingsdown, Kent, by the Rev. Preb. H. E. Fox, probably from the same locality.

Rosa ——? Mountain pasture at 950 ft., near Combe Scar, Dentdale, N.W. Yorks, v.-c. 65, July and September, 1919. I suppose this is a form of *R. mollis* Sm. Bushes erect, 3-4 ft. high, neat in habit and remarkably small-leaved. Petals white, tipped with rose.—A. Wilson. "A *mollis* form undoubtedly, under var. *cærulea*, but I never saw it so small-leaved. Rouy has a var. *Bolqueriana*, which I only know from his key characters. 'Fruit small, spherical, umbilicate at base, shorter than peduncles. Leaflets small or very small. A sub-shrub, creeping, in fissures of rocks.' If this habit agrees it might go to that."—Wolley-Dod. "A variety of *R. mollis* with smooth peduncles. This form occurs occasionally, but the peduncles are seldom smooth over the whole bush. Specimens should not consist of several branchlets or ends of them, but of a fair-sized branch with the branchlets attached."—Barclay.

R. Eglanteria Huds. (*R. rubiginosa* L.). Moorland pasture above the Minera Lime Works, Denbigh, N. Wales, v.-c. 50 at 1000 ft., September 9, 1918.—C. Waterfall. "Yes; possibly var. *apricorum* Rip."—Barclay. "*R. apricorum* Rip."—Wolley-Dod. Sent also by Mr Waterfall from Arncliffe, Upper Wharfedale, W. Yorks, v.-c. 64. On this Col. Wolley-Dod remarks—"The Distributor kindly sent me three sheets but none has flowers or fruit, so I can only say it is certainly not *R. Eglanteria*, but it may be a small form of *R. mollis* like Mr Wilson's Dentdale plant."

R. micrantha Sm., var. *trichocarpa* Rouy. Cadbury Hill, Yatton, N. Somerset, v.-c. 6, October 6, 1919.—Ida M. Roper. "I should put this under *R. micrantha* Sm., typica, which may often have glandular fruit, but the leaflets are remarkably eglandular."—Wolley-Dod.

R. dumetorum Thuill., var. *hemitricha* Rip. Lane in Filton Meads, W. Gloucester, v.-c. 34, June 17 and September 22, 1919. Has long drooping branches: leaflets biserrate, hairy on mid-rib: petioles villous and glandular: flowers brilliant pink.—Ida M. Roper. "I should describe the leaves as uniserrate, hardly even irregularly so, and label it *R. dumetorum*, var. *semiglabra* (Rip.), though some of the fruits look like those of *R. ramealis* Pug., which is near it. The colour of the flowers is exceptional."—Wolley-Dod.

"The leaf-serration is not double enough for var. *hemitricha*. It may be called var. *semiglabra* Rip., if it be worth while distinguishing from *urbica* Lem."—BARCLAY.

R. coriifolia Fr. of group *Bakeri* Déségl. Buckie Braes, Mid-Perth, August 29, 1918. This was sent to the Watson Club in 1908 as No. 15, and under the same name as I now give it on the present labels. But I found afterwards that the parcel then sent contained specimens of a very similar but different form, and this led to misunderstanding. The present sending is pure and the naming is undoubtedly correct.—W. BARCLAY. "Almost typical *R. Bakeri*."—WOLLEY-DOD.

Pyrus scandica Aschers. Haresfield Hill, v.-c. 33, August 22, 1919. A number of large trees planted on top of the hill. I think they are identical with the *Pyrus* from a cliff near Cefn, Breconshire, which Mr Ley put to *scandica* Aschers. This year there was practically no fruit to be had.—H. J. RIDDELSDELL. "Foliage only reached me. I hope flowers and ripe fruit can be collected next season. It seems very near the *P. scandica* of Syme from Arran."—SALMON.

P. minima Ley. Craig Cille, Brecon, June, 1919.—G. C. DRUCE. "Excellent examples of the plant in flower."—WHITE.

P. cordata Déségl., non Desv., nec Boiss. Border of an ancient track on Yate Lower Common, West Gloucester, flower May 13, and fruit July 20, 1919. Two large trees in a new locality half a mile or so north of the original station. See *Journ. Bot.* 40, 1918. The wood in which this pear was first observed by Mr Bucknall and me has since been cut down, and therefore the trees yielding the accompanying specimens are of special value.—J. W. WHITE. "For this I suppose the more correct name would be *P. cordata* Desv., var. *Déséglisii* (Rouy & Camus)."—DRUCE.

Saxifraga stellaris L., var. *fontana* Druce. Carnedd Llewellyn, Carnarvonshire. In some plenty on rill-borders. Seen also on the north side of Cairngorm, August 1919.—G. C. DRUCE.

Tillæa muscosa L. St Martin's Point, Guernsey, May 2, 1919.—C. V. B. MARQUAND.

Drosera anglica Huds. Cannock Chase, Staffs, September 1919. Shewn me by Captain Vevers. A new county record.—G. C. DRUCE.

Epilobium hirsutum × *parviflorum*. [2138]. Ockham, Surrey, v.-c. 17, abundant, July 30, 1919.—C. E. BRITTON. "We cannot see any *parviflorum* here. Flowers rather small, certainly, but otherwise as in *hirsutum*."—BUCKNALL & WHITE. "A pretty form with shining leaves and elegant habit; but doubtless super *hirsutum*."—DRUCE.

Trinia glauca Rchb. (*Apinella glauca* O. Kuntze). Berry Head, near Brixham, S. Devon, v.-c. 3. May 19, 1920.—C. WATERFALL. "The immature staminate plant alone reached me."—WHITE.

Cicuta virosa L. Filby Broad, Norfolk, July 3, 1919.—R. J. BURDON. "Acceptable specimens of a plant that seems to be dying out in this country."—WHITE.

Falcaria vulgaris Bernh. (labelled *Ammi majus* in error). A nice lot in a cornfield near Swalcliffe Grange, v.-c. 23, August 7, 1919.—H. J. RIDDELSDELL. "Yes, *Prionitis Falcaria* Dum. = *F. vulgaris* Bernh."—THELLUNG. Sent also by Dr Druce from a pasture at Culham, Oxon, where, although now well established, it must have been introduced since 1897. Pointed out by Mr Gambier-Parry. "A weed of cultivation distributed throughout Continental Europe. In Britain it occurs somewhat rarely as a casual, being on record from Lincs, Oxon, Hants, Kent, and Somerset. Such an appearance is well described in *Journ. Bot.* 279, 1874. The characteristic radical leaves often wither before the fruit forms."—WHITE.

Carum verticillatum Koch. Among sphagnum in a boggy field near the Lake, Llandrindod Wells, v.-c. 43, June 13, 1919.—C. WATERFALL.

Oenanthe silaifolia Bieb. Amberley, Sussex, June 12, 1919.—A. WEBSTER. "Probably; it does grow there: a poor specimen."—SALMON. "Yes, I saw it there in 1917."—DRUCE.

Siler trilobum Crantz. [433]. Origin, Cherry Hinton: cult. Watton, July 26, 1919.—F. ROBINSON. "What a pity to send out so great a rarity damp and mildewed!"—WHITE.

Anethum graveolens L. Alien on waste ground, Bradford, v.-c. 64, Sept. 13, 1919.—JOHN CRYER.

Daucus gummifer Lamark, var. *intermedius* Corb. Sea cliffs near Mevagissey, August 1919. The plants from this East Cornwall locality correspond with those gathered by me at Bedruthan near Newquay, on the western side of the county, in 1912. The latter, however, were immature, whilst those now distributed have fruit well developed. I have noticed that the mature umbels are as a rule flat and only occasionally convex. C. E. Salmon (*Journ. Bot.* 320, 1917).

suggests that the length of involucre in relation to the umbel is likely to vary with the flowering stage, and that is evidently so. Although young plants in early flower do match Withering's drawing of his *D. maritimus* and have the character on which Rouy & Camus established their (equivalent) *D. gummifer*, var. *Witheringianus*, in the fruiting stage this character fails, as the divisions of the general involucre then fall short of the umbel. For this reason we should agree with Mr Salmon that it will be better to place these coast Carrots which are not true *gummifer*—their leaves not being dark green and shining—under Corbière's variety. Some of us have doubted if *gummifer* itself be more than a variety of *D. Carota* shading into the type through intermediates such as are now discussed; but the experiment recorded by E. F. Linton (*Rep. B.E.C.* 1896), proving that in cultivation seedlings of the British plant from Durlstone Head come true with great uniformity, certainly supports its grade as a species.—J. W. White. "Yes, this is my idea also of Corbière's plant."—Salmon.

Hedera Helix L., var *sarniensis* Druce. La Haule, Jersey, April, 1919.—G. C. Druce.

Sambucus nigra L., var. or forma. [2073]. Headley Heath, Surrey, v.-c. 17, June 15, 1919. A curious plant, distinguished by the markedly concave leaflets which are incise-serrate and terminated by an isolated entire linear acute acumen about 10 mm. in length; and by the asymmetrical-based upper pair of leaflets. This Elder forms thickets in full exposure on the side of a dry chalk valley. I have not elsewhere met with any similar native specimens, but have seen an exact counterpart from Slesvig-Holstein which is included in the cover of *S. laciniata* Mill. in *Herb. Br. Mus.* The latter, of course, is very different from the Headley *S. nigra*, though the coarse cutting of the leaves of this suggests an approach to that of Miller.—C. E. Britton. "A very peculiar variation. In some hands it would certainly get a varietal name."—White.

Viburnum Lantana L., var. *viride* Kerner. Wytham, Berks, July 1919. See *Rep. B.E.C.*, p. 560.—G. C. Druce.

Galium Mollugo × *verum* (*G. ochroleucum* Wolf.). [1450]. With the parents on a gravelly bank, Langham, N. Essex, v.-c. 19, July 13, 1919. Flowers deep cream colour; stem suberect. The *Mollugo* parent was weak and trailing, not a scandent form.—G. C. Brown. "Shows very little of the *verum* influence."—Bucknall and White. "Yes, super *Mollugo*.—Druce.

Valerianella rimosa Bast. Headington, Oxon, May 1893.—G. C. Druce. "Yes, fruit unmistakable."—Salmon.

Bellis perennis L. Growing on a grass lawn at Putney and showing effects of drought, June 1919.—H. E. Fox.

Inula squarrosa Bernh. Murford Woods, Denbigh, N. Wales, v.-c. 50, August 1918.—C. WATERFALL. "Poor specimens of a rather common plant."—WHITE.

I. britannica L. Cropston, Leicester, September 1919.—G. C. DRUCE.

Matricaria inodora L., var. *salina* Bab. Sea coast, Mevagissey, E. Cornwall, August 5, 1919.—J. W. WHITE.

M. maritima L., var. *phæocephala* Rupr. Bressay, Shetland, v.-c. 112, August 28, 1919.—L. V. LESTER-GARLAND. "A plant of much interest, little known to British botanists in general. Although *M. maritima* was described by Linnaeus as a species and accepted as such by certain authors of distinction it has been less highly rated by the majority. Syme, while noting the differing fruit-characters, considers the plant of the North of Scotland to be too intimately connected with *inodora* by intermediates to rank even as a subspecies. In the last (German) edition of Koch's *Synopsis* and by Rouy (*Fl. de France*) *maritima* is classed as a variety or "forme" of *inodora*, no mention being made of phyllaries or fruit. Yet in the third (Latin, 1847) edition of the *Synopsis maritima* was well distinguished, separated from *inodora*, and this statement added :—'*Tripleurospermum maritimum* Koch. . . . Marginem autem squamarum involucri, dilutius saturatiusve coloratum, sicut in generibus affinibus, variabilem reperi.' Still, in neither of these works does *phæocephala* Rupr. find a place although it had been published at an earlier date. Mr Wilmott informs me that Ruprecht describes his plant as a var. of *M. inodora* in the *Flores Samojedorum Cis-Uralensium* (1845), stating it to be a native of the Arctic regions and that it may vary in height and leaf-characters according as the station is more or less maritime. He says, further, emphatically :—' in specc. e 12 diversis locis maris glacialis reportatis et alibi etiam a me examinatis nunquam squamas anthodii margine scarioso pallescente ut in communi planta ruderali, sed fusco-nigricante et plerumque latissimo ornatas video.' Ruprecht's material was evidently of more stability than that reported on by Syme. It may be added that Mr Bucknall and I find the fruit of these specimens to differ from those of *M. inodora* in size, shape, colour, and rugosity. We feel satisfied, therefore, with the determination. This little group of Compositæ has been so much confused by those who have written about it that it will be most useful if Mr Lester-Garland, who is understood to be working on the subject, can clear up the obscurity that now troubles us. Among more important matters one would like to know what are the 'allied genera' in which Koch found the phyllaries to vary so much in colour."—WHITE. "The fruit in my specimen is not ripe enough to make sure they are tetragonous. This has the habit of my Sutherland *phæocephala* which, however, materially altered in cultivation."—DRUCE.

Artemisia maritima L., var. *gallica* Willd. Edge of a sluice on the coast of Pevensey Bay, Sussex, v.-c. 14, October 12, 1905.—CHAS. BAILEY.

A. gnaphalodes Nutt., teste Turrill. [Q. 71]. Beaumaris, Bangor, August 1919.—G. C. DRUCE.

Doronicum Pardalianches L. Wood, Shropham, v.-c. 27, May 19, 1919.—F. ROBINSON. "Correct."—DRUCE.

Senecio vulgaris L., f. *rubricaulis* Trow. Kibworth, Leicester, April 19, 1916. Coll. Miss M. E. WHITTON; comm. A. R. HORWOOD. And f. *multicaulis-radiatus* from seed, 1919.—T. STEPHENSON.

S. squalidus L., var. *subintegrus* Druce. Oxford, August 1919.—G. C. DRUCE.

S. sarracenicus L. Turner's Hill, Sussex, August 20, 1919.—A. WEBSTER. "As amended by Koch this is the *S. fluviatilis* Wallr."—DRUCE.

S. paludosus L. Probable origin, Wicken Fen, Cambs, cult. Ledbury, July 20, 1919. Sent because it is good this year and new members may be content to have it.—S. H. BICKHAM.

Cirsium britannicum Scop. Boggy field near the Lake, Llandrindod Wells, v.-c. 43, June 13, 1919.—C. WATERFALL. "Yes, but the name must be changed to *C. pratense*; see *Rep. B.E.C.* 417, 1916, shewing reasons for the change."—DRUCE.

Centaurea Jacea L. [1832]. Hort. West Barnes, Merton, Surrey, v.-c. 17, July 3, 1919. Cultivated examples of the Knapweed from Epsom Downs, wild specimens of which were distributed through the Club in 1917 (see *Report*). This form belongs to the subspecies *eu-Jacea* Gugler.—C. E. BRITTON.

C. nigra L., var. *radiata*, teste Dr Rendle. Hedgerows, S. Tawton, Devon, August 1919.—H. E. FOX. "Well prepared specimens retaining the tints of the leaves and flowers of the living plant. As the heads are ovoid with narrow bract-scales this must be placed under

C. nemoralis Jord. Gugler, who monographed the South-eastern European forms of the genus, divides *nemoralis* (which he ranks as a subspecies of *C. nigra* L.) into two varieties—(1) *Jordani*, marked by the bract-scales, including teeth, being black and flowers non-radiate; and (2) *Nevadensis*, distinguished by its narrower brown scales and radiate flowers. Mr Fox's plant evidently comes under the last-named variety, with which I hope it may also be possible to associate most of the British plants that have been named either *nigra-radiata* or *nigra-decipiens*. Whilst one may refer the S. Tawton plant to var. *Nevadensis* Gugler, it is desirable to point out that among other characters, Boissier attributes to the species *C. Nevadensis* Boiss. & Reut. leaves wholly entire, the lower never more than subundulate, whereas the plant now distributed shews (in the more vigorous examples) shallowly pinnatified lower leaves. Many of the radiant-flowered forms of chalk hills in the south of England make a closer agreement with the Spanish plant described by Boissier."—BRITTON.

C. pratensis Thuill. [2113]. Woldingham, Surrey, July 15, 1919. Mr White reminds me that according to Nyman this, being a native of Central and Eastern Europe, should be an alien in this country; and further, that Nyman places it as a variety of *C. nigrescens* Willd., a non-British species. This implied suggestion that *C. pratensis* is therefore unlikely to be a British species is very easily met. In the first place it is essentially a plant of Western Europe, the species having been established by Thuillier in his *Flore de Paris*, where it is called ' Centauree des prés'. Rouy says it is found in all France, and the habitats given by him ' lieux boisés et prairies, bords des fosses ' are similar to the situations in which the plant grows at Woldingham, where, in the dry chalk valleys, it is found abundantly among the turf bordering roads, in scrub-grown pastures devoted to grazing, and in hayfields. As to the association of this plant with *C. nigrescens* Willd., many Central European botanists appear to have followed too closely Koch's *C. Jacea*, z. *pratensis* ' involucri foliola appendice acuta elongata remotius fimbriata saepe recurvata,' a diagnosis which covers forms related to *C. microptilon* Gren. which, in opposition to French views, Gugler places under *C. nigrescens* Willd., *sensu lato*. Mr F. N. Williams is another author who, in my opinion, appears to prefer Koch to the French botanists, although they presumably should be in a position to know Thuillier's species. Later on I hope to deal with *C. pratensis* at greater length elsewhere. —C. E. BRITTON. " If *C. pratensis* Thuill. is the same as that of Vaillant it should have naked achenes and radiant flowers. Judged by Savouré's Key (*Bull. Soc. Linn. Normand.*) this plant seems to be very near *C. nemoralis* Jord."—WHELDON. " Yes, this is my idea of *C. pratensis* Thuill. which Coste separates from *C. nigra* as a species. Usually—though not invariably—rayed as in these specimens."—SALMON.

C. nigra L., var *obscura* (Jord.). [079]. Twinstead, N. Essex, August 1919. A pretty plant from the variegated appearance of the phyllaries and the bright rose-red florets.—G. C. DRUCE. "Certainly not Jordan's *obscura* but rather, judging by the lanceolate disks of the scales, the allied form *C. nemoralis* Jord. Consequently I do not think this is the same as the plant from the same locality which I named *C. obscura* for Mr Druce."—BRITTON. "In *C. obscura* Jord. ap. Billot the appendices are appressed on the bracts, and orbicular to widely elliptic in outline, so that the heads look very dark. In these they are lightly recurved or loosely appressed above, and more strongly so or even reflexed at the base. I should think this is nearer *C. Debeauxii* G. & G., or perhaps more likely *Debeauxii* × *obscura*. The rachis of the appendix is rather narrowly elliptic to isosceles-triangular."—WHELDON.

C. Scabiosa L., var. Crickley Hill, v.-c. 33, August 18, 1919. Heads very small and apparently rayless. One clump by the roadside. Is it a *lusus* or a real variety? If the latter, it certainly deserves a name of its own.—H. J. RIDDELSDELL. "We fear that no existing name can be fitted to this form with long-stalked heads and appendages hiding the remainder of the phyllaries."—BUCKNALL and WHITE. "A slender form with small capituli—scarcely larger than those of *C. nigra*. The heads are remarkable for the way in which the appendages cover the phyllaries to an extent that is unusual in this species. I know of no named form quite like this, and have failed to match it with any example in *Herb. Brit. Mus.* at S. Kensington."—BRITTON.

Arnoseris pusilla Gaertn. Derelict sandy field near Cholham Ridge, Surrey, July 18, 1919.—A. B. JACKSON.

Crepis capillaris Wallr., var. *runcinata* (Bisch.). Port Meadowside, Oxford, growing in chalk rubble brought from Upton, Berks, June 1893.—G. C. DRUCE.

C. nicæensis Balb. King's Weir, Oxon, June 1893; and var. *eglandulosus* Crép. Headington Wick, Oxon, June 1893.—G. C. DRUCE.

Hieracium aurantiacum L. Railway bank, Baildon, v.-c. 64, June 25, 1919. Established here over twenty years and now abundant.—JOHN CRYER.

Hieracium ——? Root from Clova, Forfar, 1912; cult. Hort. Bot. Haun. C. H. Ostenfeld, 1915.—G. C. DRUCE. "Branching from base; ligules slightly ciliate; styles a little livescent. I think this is *H. chrysanthum* Backh."—CRYER.

Hieracium ——? Cautley Crag near Sedbergh, N. W. Yorks, v.-c. 65, alt. 1700-2100 ft. on Coniston Grit, August 1919.—A. WILSON. "The tall habit, outline and nature of the leaves, branching of the stem, the fairly large heads, the clothing of the phyllaries and the yellow styles place this under *H. decolor* Le, = *H. cæsium* Fr., var. *decolor* Linton. I have it from Settle, Grassington and the Great Orme. It has a strong resemblance to, and is very near, *H. Leyi*, to which some of the Yorkshire plants were at one time placed. The late Rev. Aug. Ley (*Journ. Bot.* 10, 1909) raised *decolor* to specific rank and removed it from Group *Cæsia* to *Oreadea*, next to *H. Leyi*. The late Rev. W. R. Linton approved and endorsed this change."—CRYER. "As novices, provokingly ignorant of hawkweed problems, and without a description of *decolor* (it is not indexed in Linton's work and so we missed it) we ran this plant down to *H. Leyi* and feel encouraged. But what a liquid genus must *Hieracium* be if a plant can be put back into a 'better hole' behind fifty intervening species (see *Lond. Cat.*) without the ruffling of a ligule!"—BUCKNALL & WHITE.

H. Sommerfelti Lindeb. ! Root from Clova, Forfar: cult. hort. Oxon, August 1919.—G. C. DRUCE. "Stem with fine white spreading hairs and stellate floccum. Leaves *not* gradually narrowing into the petiole. Heads smaller and more numerous. Phyllaries more glandular and more thickly clothed with grey black-based hairs. Styles darker. These characters distinguish it as *H. Sommerfelti* Lind., var. *splendens* F. J. Hanb."—CRYER.

H. pellucidum Laest. Miller's Dale, Derby, v.-c. 57, June 11, 1919. In abundance on limestone rock.—J. CRYER.

H. cymbifolium Purchas. On rock near Peveril Castle, Castleton, Derby, v.-c. 57, June 12, 1919.—J. CRYER.

H. vulgatum Fr., var. *amplifolium* Ley? Stonework of canal bridge crossing the Mersey between Stratford and Sale, v.-c. 58-59, July 25, 1919. The larger and more complete specimens were quite inaccessible.—R. S. ADAMSON. "Ley placed *amplifolium* under *H. sciaphilum* Uechtr., but this remarkable and interesting hawkweed is not that. I have nothing like it in my herbarium. The leaves are ciliate with long greyish-white hairs and almost an equal number of small glands. The stem, branches, bracts, peduncles, and phyllaries are densely covered with stiff black glands. The ligules, too, are tipped with glands and a few are scattered on the surfaces of the corollas. It seems to me to be a new species."—CRYER.

H. maculatum Sm. Roadside near Bagshot, Surrey, July 18, 1919.—A. B. JACKSON. "Yes; but not the truly wild plant. A garden escape, I presume."—CRYER.

H. protractum Lindeb. Origin, Unst, Shetland; cult. Ledbury, July 21, 1919.—S. H. Bickham. "Correct; the characters of the species are emphasised in this beautiful cultivated specimen."—Cryer.

H. umbellatum L. To shew variation in the E. Lyn Valley, N. Devon, v.-c. 4, August 1917.—W. C. Barton. "There is marked variation. One specimen has leaves almost entire; in another the leaves have triangular teeth pointing upwards."—Cryer.

Hypochœris radicata L., ? var. *hispida* Peterm. [327c]. Lyn Valley, near Brendon, N. Devon, September 14, 1917.—W. C. Barton. "In the specimens examined the phyllaries are without pectinate hairs and are minutely ciliate only at the tip. We should leave this with the type. In other gatherings from Mr Barton (same locality and same date, Nos. 327a. and 327b.) the phyllaries are hispid throughout and may well mark the variety."—Bucknall & White.

H. radicata L., var. *leiocephala* Regel. [327d]. The Lyn Valley, near Brendon, N. Devon, September 14, 1917. Much less frequent than var. *hispida*.—W. C. Barton. "This equals var. *typica* Beck —the ordinary plant."—Bucknall & White. "Yes, the 327c I should leave under type, and treat 327d as Mr Barton has done."—Druce.

Leontodon autumnale L. Four gatherings [328 a, b, c, d.] from the Lyn Valley, near Brendon, N. Devon, v.-c. 4, September 1917.—W. C. Barton. Ill-health has unfortunately prevented the contributor from working up his critical notes on the forms of this species. He hopes they will be available for the next *Report*.

Taraxacum ——? [Q. 714]. Root from Galashiels, Selkirk; cult. hort. Oxon., July 1919. Dahlstedt tells me this is a new species allied to *T. Dahlstedtii* Lindm. f. which occurs in Russia, Finland and Scandinavia. It is the plant I distributed as O. 42 [without note or comment] from Moulsford, Berks, through the Club in 1915. I hope to induce Dahlstedt to name and describe it for our next *Report*.—G. C. Druce. "Compared with existing descriptions—which seem to have become obsolete—this comes under *T. officinale* Weber, var. *typicum* Beck (*T. Dens-Leonis* DC.), agreeing in every respect.' —Bucknall & White.

T. obliquum Jord. Garden path, Wigginton, v.-c. 23, May 17, 1918. I am not sure that all the specimens distributed are correctly named. Some suggest a hybrid origin—*officinale* × *obliquum*. It would be interesting to have opinions on the point.—H. J. Riddels-

DELL. "In a wide sense the naming is correct."—DRUCE. "To us the gathering appears to be well named; we see no hybrid."—BUCKNALL & WHITE.

T. erythrospermum Andrz. Wall, Lockington, v.-c. 55, May 5, 1916. Coll. A. R. Horwood; comm. A. E. WADE. "The name is untenable; in a broad sense the plant is *T. lævigatum* DC., but I think the specimen is near *T. lacistophyllum* Dahlst."—DRUCE.

Vaccinium intermedium Ruthe. Cannock Chase, Staffs, September 1919.—VEVERS & DRUCE. See *Report* p. 567.

Microcala filiformis Hoffmgg. & Link. Littlesea, Dorset, June 13, 1919.—H. J. RIDDELSDELL.

Centaurium umbellatum Gilib. (*Erythræa Centaurium* Pers.), var. *conferta* Wheldon (ined.), forma flor. alb. [*E. Centaurium* forma inflorescentia conferta Wittr. (non *E. conferta* Pers.)]. Sand dunes, Hightown, South Lancs, v.-c. 59, August 1911.—J. A. WHELDON.

C. scilloides Druce, var. *portense* (Brot.) Druce. Newport, Pembroke, June 1919. See *Report* 290, etc., 1918.—G. C. DRUCE.

Gentiana Amarella L., var. *calycina* Druce. Reay, Caithness, July 1919. See *Report* 329, 1913. The corolla is pale-coloured, pinkish white or dull lilac, and scarcely protrudes beyond the calyx-segments. It occurs also in Sutherland.—G. C. DRUCE.

[*G. lingulata* C. A. Agardh], var. *praecox* Towns. Heathland, Perranporth, v.-c. 2, June 20, 1919.—F. ROBINSON.

Limonium bellidifolium Dum. Blakeney Point, Norfolk, July 11, 1919.—R. J. BURDON. "Yes, *S. bellidifolia* DC. Dumortier's name should not be used. The sod of earth attached to my example makes it a quite impossible herbarium specimen; it is really easy to detach the adherent salt-marsh when the plant is gathered."—SALMON.

Primula polyantha Mill. Near Beedon, W. Sussex, May 1919.—G. C. DRUCE.

P. veris × *vulgaris* = *P. variabilis* Goupil. Hilly woodland, Litton Woods, Upper Wharfedale, v.-c. 64, May 18, 1918, alt. 1200 ft.—C. WATERFALL.

P. vulgaris Huds., dwarf form. Plants grown in good soil two years, 1919.—T. STEPHENSON. "This form appears to correspond to a sheet in *Herb. Brit. Mus.* '*P. vulgaris* Huds., var. *Chloe* C. B. Clarke, from Dole's, Andover, Hants, Leg. C. B. Clarke, May 17, 1900; N. 49796'. As to this there is in *Proc. Linn. Soc.* 41, 1903, the following note:—'Mr C. B. Clarke, F.R.S., F.L.S., showed specimens of a variety of the Primrose (*P. vulgaris* Huds.) with remarkably small flowers, to which he proposed to give the varietal name *Chloe*. (He subsequently considered that it was probably a hybrid between the Primrose and a form of the Cowslip which he had found on the Hants Downs).' As in Mr Stephenson's plants, Mr Clarke's specimens have leaves much reduced in size and breadth of lamina, with relatively long petiole into which the lamina is not or scarcely decurrent. It may be noted, however, that the distinctions given in Babington's *Manual*, 1856, in the forms of the leaves of *P. vulgaris*, *P. veris*, and *P. elatior*, while broadly applicable, are subject to great variation, as is evident from a comparison of the sheets in *Herb. Brit. Mus.* There is nothing in Mr Stephenson's material to suggest hybridity—such a question is more easily determined from fresh specimens—but if he could supply the origin of the plants he distributed and say if *P. veris* was present in the neighbourhood it would be helpful."—LITTLE. "This is well worth growing from seed. I have a similarly small-flowered plant from Berkshire in which also the leaves are remarkably small. If constant it may be well worth separating as var. *nana*."—DRUCE.

P. farinosa L. Damp pasture near Arncliffe, Upper Wharfedale, v.-c. 64, May 1918, alt. 1200 ft.—C. WATERFALL.

Androsace maxima L. Grown at Billingshurst from seed of specimen sent from rubbish-heaps at Glasgow by Mr Lee, May 4, 1919.—ALF. WEBSTER. "Yes; one would like to know the method of its introduction—hortal, lanal, carinal, agrical? Dr Thellung agrees with my determination."—DRUCE. "We think it most doubtful if this be correctly named; or if it be European. We have plenty of Continental *maxima* for comparison. Note the peculiar habit with one long flexuose branch from the umbel, and the calyx wide open both in flower and fruit whereas in *A. maxima* it is always closed."—BUCKNALL & WHITE. "I cannot match this plant at Kew or at S. Kensington. I should like to know more about it."—LESTER-GARLAND.

Lysimachia punctata L. Edge of lake, Scoulton Mere, v.-c. 28, July 24, 1919.—F. ROBINSON.

[*Collomia coccinea* Lehm.] Grown at Billingshurst from seed of specimen from waste heap at Glasgow sent me by Mr Lee, July 8, 1919.—A. WEBSTER. "This is *C. linearis* Nutt."—DRUCE. "A native of N.W. America, and has been observed as a garden weed in this country."—WHITE.

Symphytum asperum Lepechin. Root from near Cockburnspath. East Lothian, J. Fraser; cult. at Clifton, Bristol, July 1919.—C. Bucknall.

Pulmonaria ——? [609]. Leaves variable, mostly spotted: corolla pink, turning blue. Copse near Dartington Cross, S. Devon, v.-c. 3. Flowers April, summer leaves June, 1919.—C. V. B. Marquand. "Dr Stapf names this *P. affinis* Jord., known from France and Belgium. An interesting record, see Secretary's *Report*."—Druce. "Nyman places *affinis* as a subspecies of *P. saccharata* Mill. This plant seems to differ in the soft glandular hairiness of the upper stems which should be bristly."—Bucknall & White.

Scrophularia aquatica L., var. *appendiculata* Mer. [2074]. Among *Sambucus nigra* scrub, on the side of a dry chalk valley near Headley, Surrey, June 15, 1919.—C. E. Britton. "Beautiful examples of the variation."—White.

S. alata Gilib. Compton Abdale, v.-c. 33. August 21, 1919. For a short distance in the same stream as *Mentha rubra*. This figwort was distributed from E. Gloucester a few years ago. Fruiting specimens now sent.—H. J. Riddelsdell.

Mimulus moschatus Dougl. [379]. Taw valley below Belstone, N. Devon, v.-c. 4, August 11, 1919. Plentiful in the streamlets: probably escaped from a cottage garden, but now naturalised. Quite scentless, but see *Journ. Bot.* 285, 1919. This may probably be the locality indicated by Mr Hiern, "apparently wild, July 9, 1887," in *Journ. Bot.* 331, 1908.—W. C. Barton. Sent also from wet places below Causand Beacon, Devon, by the Rev. H. E. Fox, who thought it fully naturalised. "I saw it last summer on a wild moor in E. Cornwall."—White.

Veronica peregrina L. Killiow, near Truro, v.-c. 1, June 12, 1919, with Mr F. Robinson.—F. Rilstone.

Euphrasia brevipila Burnat & Gremli. Wigginton, v.-c. 23, July 10, 1919. Distributed last year in younger state. Perhaps maturer specimens may make agreement among experts possible.—H. J. Riddelsdell. "*E. brevipila*, with very numerous short-stalked glands, especially on calyx-teeth."—Pearsall. "Although it shows some of the shortly stalked glands characterising *E. brevipila*, this still seems to me to be nearer, on the whole, to *E. borealis* Towns."—Pugsley. "This differs from typical *E. brevipila* in the denser spike, the less spreading bracts with shorter, less aristate teeth, and the smaller, more included flowers. In some respects it comes near to *E. occidentalis*, but that is a plant of the sea coast and differs in other ways. Being in full fruit as early as July 10 it is evidently an aestival form, and this may account for the paucity of branches and for some of the variations mentioned above. Except for the abundant shortly stalked glands it is almost glabrous, while both *E. brevipila* and *E. occidentalis* are generally decidedly hairy. Compare this with Mr Marquand's plant from Devil's Bridge."—BUCKNALL.

Euphrasia —— ? [602]. Pasture above River Mynach, near Devil's Bridge, Cardigan, alt. 950 ft., July 19, 1919.—C. V. B. MARQUAND. "Mostly *E. brevipila* with few glandular hairs on stem and many on bracts and calyx. Two of my specimens are undoubted *E. Rostkoviana*, with many long glandular hairs on both stem and foliage."—PEARSALL. "*E. brevipila*, but the sheet sent includes one specimen of *E. Rostkoviana*."—PUGSLEY. "*E. brevipila* Burn. & Gremli."—BUCKNALL.

Euphrasia —— ? [601]. Banks above River Rheidol, Llanbadarn Farm, Cardigan, August 6, 1919.—C. V. B. MARQUAND. "Young, but typical, *E. Rostkoviana*."—BUCKNALL, PEARSALL, & PUGSLEY.

E. Kerneri Wettst. [057]. Wet slopes of fells on west side of Wastwater Lake, Cumberland, v.-c. 70, August 27, 1919—W. H. PEARSALL. "Yes, a small form."—BUCKNALL.

E. Kerneri Wettst. [341]. Growing with *Alchemilla alpina* and very scanty grass on granite at foot of Wastwater Lake, Cumberland, v.-c. 70, August 28, 1919.—W. H. PEARSALL. "If *Kerneri*, unlike the usual form; much less branched."—PUGSLEY. "At first I agreed to this as *E. Kerneri*, but on further study I believe it to be *E. scottica*, in spite of the dry situation in which it grows and the conspicuous flowers. It corresponds in habit and details of foliage, etc., with spns. collected by Townsend in Scotland and by Marshall on Exmoor, and has the white efflorescence on the under side of the leaves mentioned in the description. The flowers are scarcely larger than in some of the Scotch and Exmoor plants.—BUCKNALL.

Euphrasia —— ? Roadside, Bovey, S. Devon, August 26, 1919. Coll. Miss E. M. Parkinson; comm.—W. H. PEARSALL. These are obviously mixed specimens although gathered by a capable botanist. Both *E. Kerneri* and *E. nemorosa* are present. "Ill-selected; consisting mostly of fragmentary plants. The gathering appears to be chiefly *E. nemorosa*, with some pieces of *E. Kerneri* as suggested by Mr Pearsall."—PUGSLEY. "These plants are rather old and therefore difficult to name. They are not typical of either *nemorosa* or of *Kerneri*, the foliage being not quite that of the former and the flowers being small for the latter, of which there appear to be several forms in Britain."—BUCKNALL.

Euphrasia ——? [600]. Monk's Cove near Llanon, Cardiganshire, July 23, 1919.—C. V. B. MARQUAND. "These are very young, but the more developed specimens show distinctly the characters of *E. nemorosa* H. Mart."—BUCKNALL. "Very sparse clothing; young *E. nemorosa.*"—PEARSALL. "Gathered too young, only just coming into flower. The plants have the facies of *E. Kerneri*, but the flowers are very small for that, and they probably belong to *E. nemorosa.*"—PUGSLEY.

Euphrasia [*nemorosa* H. Mart.] No. 1487. Chalk-pit, Somersham, E. Suffolk, v.-c. 25, August 7, 1919. Abundant and the only form observed in the pit. The plants are young and have more aristate bracts than in typical *nemorosa*. My No. 36 collected here in 1912 was named *gracilis* by Prof. Lindman, but this year I did not see any plants which could go to that species.—G. C. BROWN. "Is *E. Kerneri* Wettst., collected early."—BUCKNALL, PEARSALL, & PUGSLEY.

E. occidentalis Wettst. Caldy Island, Tenby, S. Wales, v.-c. 45, June 30, 1919. Coll. Miss E. M. Parkinson; comm.—W. H. PEARSALL. "Yes, very sparingly bristly and glandular."—PUGSLEY. "Even under the microscope I fail to find stalked glands in these specimens. Otherwise they are identical with early-flowering plants gathered in Cornwall by Mr J. W. White and by myself on Brean Down and Purn Hill, N. Somerset. These I described in *Brit. Euphr.* as *E. occidentalis*, var. *praecox*. Some of the latter are nearly or quite eglandular and are scarcely distinguishable from small plants of *E. borealis* at a similar stage of growth. It appears that these form a connecting link between two series of forms, one of which leads up to strong, bristly and glandular *E. occidentalis*, and the other to the glabrous and eglandular *E. borealis.*—BUCKNALL.

E. minima Jacq. [74]. Bigland Tarn, N. Lancs, July 21, 1919.—W. H. PEARSALL. "I agree."—BUCKNALL. "Not *E. minima*, but a rather large-flowered form of *E. scottica* Wettst. Well dried, but unfortunately gathered too early for fruit."—PUGSLEY.

Rhinanthus Crista-Galli L., var. *stenophyllus* Druce. Oxborough Fen, W. Norfolk, v.-c. 28, July 16, 1919.—J. E. LITTLE. "Correctly named."—DRUCE & SALMON.

R. stenophyllus Druce. Sandhills, Wallasey, v.-c. 58, June 20, 1919.—W. G. TRAVIS. "Perhaps, but my specimens are not very satisfactory."—SALMON.

Melampyrum pratense L., var. *scotianum* (Beauv.). Altnaharra, W. Sutherland, growing with *Erica Tetralix* and *Sphagnum*, not gregariously but as solitary individuals, July 1919. A most beautiful plant from its corolla-margin having a line of carmine-red about 1 mm. broad, the corolla being clear yellow with a pale tube. Life is hardly long enough to give the full name as used by M. Beauverd—*M. pratense* L., subsp. *Eu-pratense* Beauv., var. *alpestre* Beauv., subvar. *scotianum* Beauv., but the plant seems well worth varietal rank. It has been sent me also by our member Mrs Paul Ascherson from moorland above Tongue, W. Sutherland; and Mrs Wedgwood and I saw it on Cairngorm.—G. C. DRUCE.

Orobanche minor Sm., var? [1301]. Slipton, Northants, June 1918. Rare in Northants; appeared in one clover field only.—G. CHESTER. "Not ordinary *minor*. I should like to see fresh specimens. Was *major* there? I have the same form from Surrey."—DRUCE. "I can make nought but *minor* of this."—SALMON. "Nor can we."—BUCKNALL & WHITE.

Utricularia major Schmidel (*neglecta* Lehm.) probably, fide A. Bennett. Mud in shallow water, Loch of Græmeshall, Holm, Mainland, Orkney. Plants neither in flower nor fruit were common among the stems of *Scirpus Tabernæmontani* at the west side of the loch, August 25, 1916. See *Rep. B.E.C.* 497, 1916.—H. HALCRO JOHNSTON. "Probably correct, but Prof. Glück held strongly that flowerless specimens were insufficient for accurate determination between *vulgaris* and *major*."—DRUCE.

Mentha spicata L. North Leigh, Oxon, completely naturalised, July 1919.—G. C. DRUCE.

× *M. hircina* Hull. (*M. aquatica* × *longifolia*). In a damp shady lane above Weston-in-Gordano, N. Somerset, Sept. 8, 1919. This has leaves like those of *M. longifolia* but they are petiolate as in *M. aquatica*. The calyx is intermediate in size and in the relative length of its teeth between those of the two species. This appears to be very near to a specimen of *M. piperita sylvestris* collected by Sole himself at Lyncombe Spa, Bath, but is more hairy and the leaves are rather narrower. Mr A. Bennett has kindly compared it with specimens in his herbarium and tells me that it is similar to a plant from Prah Sands, Cornwall, which Mr Baker passed as his idea of *M. pubescens*. var. *hircina* Hull.—C. BUCKNALL. "This does not correspond with Syme's figure 1027 in *E.B.* nor with his description (*E.B.* vii., 11) which is that of a subglabrous plant. Syme cites Sole's plate 24 for it, but a peppermint sweet-smelling (piperis odore gravi) plant does not agree with *hircina* and suggests rather a *rotundifolia* parentage. I have a form similar to Mr Bucknall's from Cornwall which I leave under *M. pubescens* Willd. although I am not sure if that be a tenable name for a *longifolia* hybrid. Baker took a similar view to Syme (see

Journ. Bot. 243, 1865) and cites Sole's plate and description. Smith (*Eng. Fl.* iii., 77) says *hircina* is less agreeable than the other Peppermints."—Druce.

M. rubra Sm. Plentiful in a roadside stream at Compton Abdale, v.-c. 33, Sept. 11, 1919. There is a record of this Mint for E. Glouc. in *Phyt.* ii., 881; but there is no recent trustworthy account of its occurrence in the vice-co. until now.—H. J. Riddelsdell. "Yes, under × *M. rubra* (Sm.)—Druce. "I agree; scent unmistakable."—Salmon.

Satureia montana L. Ruined walls of Beaulieu Abbey, S. Hants, Oct. 12, 1919. On my first visit to the Abbey in 1912, I saw this plant growing mostly in somewhat inaccessible situations, about 20 ft. from the ground, and at the time considered it might be a slender form of *Hyssopus officinalis*, which for 250 years or so has been known to exist in the same locality. Others besides myself have been of the same opinion. I was, however, never satisfied with this conjecture, and on obtaining fresh specimens this year I determined it as above. Mr E. G. Baker has kindly confirmed the naming, and Dr Druce has informed me that Miss C. E. Palmer noticed it at Beaulieu in 1900, naming it *Hyssopus*, and he himself gathered it in 1908 but omitted to record it. It has been reported as an alien in Sussex (*Rep. B.E.C.* ii., 350) though I do not know the exact locality. From close observation at Beaulieu I conclude that *Satureia montana* has been as long naturalised there as the Hyssop or *Dianthus plumarius*, and consequently should be admitted to a place in our lists on the same grounds, as probably introduced by the monks before 1539, the date of the dissolution of the establishment, temp. Henry VIII.—J. Cosmo Melvill. "Correct."—Bucknall & White. "Yes. I think the var. *rigidula* Jord. & Fourreau. See *Report* p. 573.—Druce.

Hyssopus officinalis L., f. *alba*. A seedling of a plant of usual colour which came from the ruins of Beaulieu Abbey, Hants, cult. Ledbury, July 21, 1919.—S. H. Bickham.

Salvia verticillata L. On a railway embankment at Buildwas Junction, Salop, June 27, 1919. In a few years this has thriven exceedingly and has now increased ten-fold, not however extending beyond the railway.—J. C. Melvill.

Scutellaria minor L., with calyx and pedicel glandular. The Taw valley below Belstone, N. Devon, v.-c. 4, Sept. 1919.—W. C. Barton. "The commoner British form: the glabrous plant is rare."—Druce.

Stachys germanica × *alpina*. From seedlings furnished by C.

E. Salmon. See *Journ. Linn. Soc.*, May 1919. Cult. Ledbury, June 25, 1919.—S. H. Bickham. "Very welcome."—White.

× *S. ambigua* Sm. Wayside, S. Tawton, Devon, July 20, 1919. —H. E. Fox. "An excellent example."—Bucknall & White.

× *S. ambigua* Sm. Bank of stream, Polperro, v.-c. 2, July 10, 1919.—F. Rilstone. "Yes, the large-flowered form."—Druce. "Mine is a beautiful specimen of *S. palustris* × *sylvatica*, well matching Sowerby's plate of Smith's *ambigua* in *E.B.* xxx., t. 2089." —Salmon.

S. arvensis L. Wansford, Northants, v.-c. 32, Sept. 1918. Rare in Northants.—G. Chester.

Galeopsis speciosa Mill. Among corn, Stribers, N. Lancs, July 12, 1919.—W. H. Pearsall.

Teucrium Botrys L. Near Sapperton, v.-c. 33, native, August 26, 1919. I distributed it from this locality some years ago.—H. J. Riddelsdell.

T. Chamædrys L. Camber Castle, Sussex, Sept. 8, 1919.—A. Webster. Also from Haresfield Hill, v.-c. 33, August 22, 1919. Well established on the bare hillside, but quite close to a garden.—H. J. Riddelsdell.

Ajuga reptans L. In a very wet meadow, Parkway near Ledbury, July 18, 1919. The ground was so wet that the lower leaves had rotted. I could find no stolons, but this was possibly occasioned by the swamp-like state of the meadow.—S. H. Bickham. "It seems that the only described variety agreeing with this in the absence of stolons is *A. alpina* Vill. Dauph. 2, p. 347, non L., nec All. = *A. reptans*, var. *alpestris* Gremli and *A. Candolleana* Rouy. This is a mountain plant and we do not know ir it be usually found under conditions corresponding to those described by our contributor."— —Bucknall & White.

Corrigiola littoralis L. On shingle in profusion, Slapton Ley, S. Devon, v.-c. 3, Sept. 4, 1919, coll. E. M. Reynolds; comm.—F. Robinson. And from the same locality, three days earlier.—A. B. Jackson.

Scleranthus perennis L. Sandy heath, Thetford, v.-c. 28, July 29, 1919.—F. Robinson.

Amaranthus Thunbergii Moq., var. *maculatus* Thell. Waste ground, Bradford, v.-c. 64, abundant each year since 1907. August 9, 1919.—John Cryer. "Yes, see *Rep.* 306, 1918."—Druce.

Chenopodium polyspermum L., var. *cymosum* Moq. Cultivated ground, Weybridge, Surrey, August 1918, coll. J. W. Beck; comm. —G. Chester. "Agrees well with the description of *C. polyspermum* L., var. *cymosum* Chevallier given in the *Camb. Brit. Flora.*" —Bucknall & White.

Salicornia ——? Hayling Island, Sept. 1, 1919.—R. J. Burdon. "The two specimens are undoubtedly *S. herbacea*, f. *stricta* Moss and Salisbury."—Salisbury.

S. herbacea L., seedlings. Saltings by the creek, Alresford, N. Essex, v.-c. 19, May 20, 1919.—G. C. Brown. "Regarding *Salicornia* seedlings it is impossible to determine the species of these in a dried condition. These might quite well be *S. ramosissima* and not *S. herbacea* as suggested."—Salisbury.

S. ramosissima Woods, forma. [342 A]. Drier part of salt marshes, Pagham harbour, W. Sussex, v.-c. 13, Sept. 12, 1918.—W. C. Barton. "These are I think merely a state of *S. ramosissima* which approaches *S. gracillima* in habit. It is a form occurring when the plants are abundant or densely crowded and have suffered from intertidal drought."—Salisbury.

S. radicans Sm. Wet sand, Chesil Beach, Dorset, August 3, 1896.—J. W. White.

Polygonum Raii Bab. In loose sand on the coast, west of Criccieth, Carnarvonshire, July 24, 1880.—Chas. Bailey. Also from the shore of Clarach Bay, Cardiganshire, 1918.—T. Stephenson. "Right."—White.

Rumex maritimus L. Walmour Common, W. Glouc., v.-c. 34, Sept. 13, 1919. I found this species some years ago near Arlingham in West Glouc. It has been known many years in East Glouc. (Coomb Hill Canal).—H. J. Riddelsdell. "Yes."—Druce. Also from ditches near Acle, Norfolk, July 24, 1919.—R. J. Burdon. "My specimens are young, but are they not × *limosus* Thuill.?"—Druce.

R. obtusifolius L., ? var. *macrocarpus* Dierbach. Littleport, Cambs, v.-c. 28, July 14, 1919. Plant about four feet high, much branched.—J. E. Little. "This must come under *obtusifolius*, but I do not recollect seeing more *limosus*-looking teeth on fruiting segments. They are like those figured in *Camb. Brit. Fl.* ii., t. 145, fig. g., which is a more extreme drawing than that in Trimen's plate (*Journ. Bot.* 1873, t. 131, fig. 2a)."—Salmon. "Yes, the plant agrees well with figure and description of the variety in the *Cambridge Flora.*"—Bucknall & White.

Euphorbia Cyparissias L. Cornbury, Oxon, June, 1919, in a part of Wychwood Forest where planting had been done. Doubtless adventive and at no remote date.—G. C. DRUCE.

Ulmus vegeta Lindley? Windmill Hill, Hitchin, Herts, v.-c. 20, Sept. 1919. This was distributed in 1917 as *U. nitens*. I now send the mature leaves as desired by Mr Jackson. No samaras were produced this year.—J. E. LITTLE.

Urtica dioica L. [460 A], and var. *angustifolia* Wimm. and Grab. [460 B]. Wet ground under trees, South Tawton, N. Devon, v.-c. 4, Sept. 2, 1919. These two forms grew in distinct groups some distance apart, and a form with typical leaves was plentiful near by. Both male and female plants occurred in each group. As Dr Druce noted on his specimens from North Stoke (1912), the form 460B was much less virulent than the type.—W. C. BARTON. "Yes; and to *angustifolia* (although less characteristic) may be put No. 400."—DRUCE.

Alnus glutinosa Gaertn., var. *macrocarpa* Loudon. One tree, 16 ft. high, near Perryfield, Petworth, W. Sussex, v.-c. 13, September 17, 1918. Prof. Henry has seen this and agrees to the naming.—W. C. BARTON. "Yes, this comes under Loudon's var. which is described as having 'leaves and fruit rather larger than those of the species.' This is amplified in *Camb. Fl.* into pistillate catkins 3 cm. long; in these specimens they are not more than 25 mm."—DRUCE. "The largest catkin in my example measures 22 mm."—WHITE.

Salix aurita × *cinerea* = *S. lutescens* A. Kern. Shirehampton Marsh, near Bristol, v.-c. 34, April 22, and July 4, 1919.—IDA M. ROPER.

S. aurita × *caprea* = *S. capreola* J. Kern. Limestone rock near the Minera Lime Works, Denbigh, N. Wales, v.-c. 50, June 16, 1919. —C. WATERFALL. "This is *S. caprea* in the main, but the serration of leaves, slender tangs, &c., indicate another species in combination, which is probably *S. aurita*."—LINTON.

S. cinerea L., f. *oleifolia* Sm. Bank of rhine, Nailsea Moor, N. Somerset, v.-c. 6, May 20, and July 5, 1919.—IDA M. ROPER.

S. cinerea × *viminalis* = *S. Smithiana* Willd. S. Croxton, Leicester, v.-c. 55, April 24 and May 28, 1916, coll. A. R. Horwood; comm. A. E. Wade. "None of the leaves on my specimen is lanceolate. All seem too wide and rounded below for this. I should prefer *caprea* × *viminalis* = *S. mollissima* Sm."—PEARSALL.

Pinus Pinaster Ait. Bournemouth, April 16, 1919, coll. W. Elsegood; comm. F. Robinson.

Helleborine longifolia Rendle & Britten. (*E. palustris* Crantz). Sandhills between Brill and Pendine, Carmarthenshire, August 1, 1919.—C. V. B. Marquand. "Beautifully dried."—White. "The correct name is *Helleborine palustris* Schrank: the trivial *longifolia* is a nomen confusum."—Druce.

Orchis praetermissa Druce. Rudley, S. Hants, June 1919.—G. C. Druce. Dr Druce distributed also some examples from "Somerset Flats," coll. J. Boys; and from "St. Ouen's, Jersey," coll. T. Attenborough.

O. praetermissa Druce. Itchington Common, Tytherington, W. Gloucester, v.-c. 34, May 31, 1919.—Ida M. Roper. "Yes."—Druce.

O. maculata × *Fuchsii* = *O. transiens* Druce. [1162]. Langham Moor, N. Essex, v.-c. 19, June 17, 1919.—G. C. Brown. "Yes; this is often mislabelled *O. latifolia* in herbaria."—Druce.

Allium sibiricum L. Lizard Downs, Cornwall, v.-c. 1, June 18, 1919.—F. Robinson.

Muscari racemosum L. Dry heath, Lakenheath Warren, Suffolk, v.-c. 26, April 21, 1919.—F. Robinson. "Too young, really."—White.

Ornithogalum umbellatum L. Besilsleigh, Berks, May 19, 1919. The hot season induced this plant to flower profusely and therefore it revealed itself in many new localities where its presence had been unsuspected. In this one the pasture was a splendid sight from the abundance of blossom. It is probably native in Berks and Oxon.—G. C. Druce.

Juncus bufonius L. [450—458]. A number of gatherings from localities in Guernsey, N. Devon and N. Wales. The series gives some idea of the extreme variability of the species, and will, I hope, enable members to test the conclusion reached in my note in last year's *Report*. The perianth segments often vary in length even on the same plant and show a tendency to shorten in plants grown on dry soil or in exposed places.—W. C. Barton. "Instructive examples of the plastic condition of this protean species. Nos. 456, 457, from Petit Bot, Guernsey, come very near to var. *halophilus* Buchenau & Fernald. See *Rhodora* v., 391, 1902."—Druce.

J. compressus Jacq. Roadside south of Redhill, Surrey, December 2, 1918. In 1918 Col. A. H. Wolley-Dod informed me that a

Juncus, either *Gerardi* or *compressus*, grew in the locality stated on the label. It was not until December 2nd, however, when botanising is usually quite over, that I was able to visit the spot, where the plant occurred in quantity over a small area. Although so late in the season when most of the capsules had shed their seed, it was possible to gather, what I hope members will consider, passable herbarium examples of undoubtedly *J. compressus*. The foliage particularly interested me and I have distributed a leafy shoot with each sheet, believing it to be a good distinguishing feature of this species about which I hope, later on, to write a further note.—C. E. SALMON. Another gathering, probably from the same locality—Salford, near Redhill, August 14, 1919—is contributed by L. V. Lester-Garland. "Luxuriant and typical."—BUCKNALL & WHITE. "Yes, our inland plant."—DRUCE.

J. tenuis Willd. Roadside, Glen Nant, Argyll, v.-c. 98, September 9, 1919.—L. V. LESTER-GARLAND. " Doubtless introduced here, as elsewhere, with American forage."—DRUCE.

J. effusus × *conglomeratus*? One tuft amongst *J. conglomeratus* by a pond near Chelford, Cheshire, August 9, 1919. Certainly not type *effusus* and flowering distinctly earlier than *effusus* would.—R. S. ADAMSON. " This may possibly be the hybrid suggested. I should, however, incline to name it *J. diffusus* Hoppe (*effusus* × *inflexus*). The panicle certainly is not particularly loose or widely branched, but rushes are apt to vary a good deal in that respect. Of more importance is the finely striate stem and characters of perianth and capsule."—WHITE.

Luzula campestris DC., forma? Billingshurst, Sussex, May 18, 1919.—ALFRED WEBSTER. " This is the *Juncoides campestre*, var. *umbellata* (Syme) of *Fl. Berks*. 505, 1897."—DRUCE. "The seeds are not ripe, but they seem to be those of *multiflora* rather than *campestris*."—SALMON.

L. pallescens Bess. Origin near Pyrford, 1910; hort. Reigate, August 1918. See *Journ. Bot.* 188, 260, 1910.—C. E. SALMON.

Potamogeton polygonifolius Pourr. Dyke on moor between Wrexham and Ruthin, v.-c. 50, North Wales, September 24, 1918. —C. WATERFALL. " Correct."—BENNETT.

P. nitens Weber. R. Leven, Haverthwaite, N. Lancs, v.-c. 69b, July 17, 1919.—W. H. PEARSALL. " Yes."—BENNETT.

P. densus L., var. *angustifolius* Wallr. [424]. Pool on heath, Stow Bedon, v.-c. 28, May 22, 1919.—F. ROBINSON. " Ascherson &

Graebner *Das Pflanzenreich* iv., 11, 1907, refer this to *P. setaceum* L. *Sp. Pl.* ed. i., 127, 1753. 'Potamogeton foliis lanceolatus oppositis acuminatus.' There is no specimen under this name in the Linnean Herbarium, so that I agree with Dr Hagstrom *Crit. Res. Potamogeton* 262, 1918, in rather using Wallroth's name *Sch. Crit.* 66, 1822. It is the *P. oppositifolium*, β *angustifolium* Lam. et DC. *Fl. France* v., 311, 1815."—BENNETT.

P. Friesii Rupr. Ditches, Burgh Common, Norfolk, June 30, 1919.—R. J. BURDON. "Correct."—BENNETT.

P. pusillus L. Poaka Beck Reservoir, N. Lancs, v.-c. 69b, August 21, 1919.—W. H. PEARSALL. "Probably correct."—BENNETT.

P. Sturrockii Ar. Benn. Coniston Lake, N. Lancs, v.-c. 69b, September 18, 1919. Ullswater Lake, Westmoreland, v.-c. 69a, August 13, 1919. Crummock Water, Cumberland, v.-c. 70, August 29, 1919. During the past five years we have gathered this beautiful and interesting species in 10 of the English Lakes—the foregoing three and also Windermere, Esthwaite Water, Buttermere, Derwentwater, Wastwater, Hawes Water, and Ennerdale. Only in one of these—Esthwaite Water—does the species flower and occasionally fruit, but although we waited till the end of September in the hope of gathering it there in fruit, it had only developed flowers and was in very poor condition. The usual method of propagation in the lakes is by means of winter-buds (turios). I sent Dr J. O. Hagstrom a series of the plant from five of our English lakes, last year, and will quote the main points of his reply:—"A new species? No! I can find no qualities distinguishing it from *P. pusillus*, with which all its properties coincide. Stem terete, thread-like, branched, with internodes and anatomy just as in *pusillus*. Nervation and form of leaves and sheaths, peduncles and spikes—likewise! Your *P. Sturrockii* of the English lakes is to my opinion pure *P. pusillus* L.: but with the obtusest leaves (f. *obtusissimus*). And it is an interesting fact that you have in the neighbourhood also the acutest form (f. *acutissimus*)—your plants from Poaka Beck." As the two forms referred to are included in this year's distribution I thought this opinion might well accompany them. These Lake District specimens were all named *Sturrockii* by Mr Ar. Bennett. I thought them quite distinct from Scotch specimens so named, and Mr Corstorphine, too, thought them different, but Mr Bennett holds to his opinion. I may refer to this again next year.—W. H. PEARSALL.

Zannichellia gibberosa Rchb. Wyke, West Surrey, July 1917.—G. C. DRUCE.

Scirpus pauciflorus Lightf. Small form with reflexed barbs of bristles longer than usual. Wet sand on coast near Freshfield, S.

Lancs, v.-c. 59, June 21, 1919.—J. A. WHELDON. "Yes, a small state. The barbs on the bristles are no longer in these examples than those on my Somerset (Mendip) gathering."—SALMON. A similar dwarf plant is contributed by the Rev. H. J. Riddelsdell from Littlesea, Dorset, June 12, 1919.

S. nanus Spreng. In enormous quantity but mostly barren, on the muddy margin of brackish water at Pwlheli, Carnarvonshire, August 1919, where Miss Cobbe discovered it in July 1919. A very welcome find, since in the other British localities it has disappeared or become scarce. The plant has been described as annual, but it perennates by means of the curious and characteristic bulbils.—Mrs WEDGWOOD & G. C. DRUCE.

S. maritimus L. Pond, Boarstye Green, N. Essex, v.-c. 19, 10 miles inland, June 26, 1919. Very abundant in deep water on a clay subsoil, quite removed from haloid influence and at a considerable elevation, thus negativing the possibility of former tidal connection with the Blackwater estuary. Plentiful on the coast, but I have never previously noticed it much beyond the limits of brackish marshes.—G. C. BROWN.

Carex disticha Huds., forma. Ashwell, Rutland, June 3, 1916.—A. R. HORWOOD. "Yes, forma *interrupta*."—DRUCE. "Two of the three examples on my sheet possess a bract equalling or overtopping the spike; these would come under 'var. *longibracteata* Schleich,' which seems, at the highest estimation, to be no more than a *forma*."—SALMON.

C. aquatilis Wahl. Side of Blelham Beck, Windermere, N. Lancs, August 16, 1919. This is sent as confirmatory of Mr R. L. Praeger's original record for this station.—W. H. PEARSALL. "First found here by Miss Knowles and Mr Praeger, of Dublin, 'August 1895, on the north bank a short distance from the mouth.' It has been found in Cumberland by Mr C. E. Salmon, and the English specimens (apart from the Welsh) agree with those from Co. Limerick (Philips). In them the spikes vary from 5 cm. long to 3 cm. In Caithness where *aquatilis* grows with *C. kattegatensis* Fr. it seems to assume the same characters of glumes and spikes. In specimens of *aquatilis* (Marshall) from the Wick river the spikes are 7-10 cm. long, and the glumes twice as long as the fruit (var. *cuspidata* Fr.), while in some Irish specimens the glumes are only three-quarters the length of the fruit. The habitats of this *Carex* so far south in Ireland, England, and Wales are remarkable. In Sweden it is rare in Smaland and Ostergothland, not becoming general till farther north; it is not on record for Denmark, and in Russia does not occur south of Jugria. In Asia it is found along Siberia to Greenland. Herr Kükenthal doubts if the var. *cuspidata* of *aquatilis* 'be pure *aquatilis*, from the stalked spikelets and the acute glumes. I suspect a cross with *salina*.' But here I think the writer is wrong; however much it may apply to the Caithness specimens it certainly does not to specimens from Kirkcudbright (M'Andrew) which, in *Ann. Scot. Nat. Hist.* 236, 1910, I named var. *rigidus*; here the glumes are quite as long and acute as the Caithness ones, and the spikes are sessile. There is no *salina* there."—BENNETT. " Perhaps this is var. *virescens* Anders."—DRUCE.

C. Goodenowii Gay. Black Essett Tarn, Westmoreland, v.-c. 69, June 1919.—A. WILSON. " Is f. *fuliginosa* A. Br. = *melaena* Wimm."—BENNETT. "I think var. *recta* Fleisch."—DRUCE.

C. Goodenowii Gay, var. Littlesea, Dorset, v.-c. 9, June 13, 1919. Fertile spikes reduced. I hardly think the form is due to the drought, which had only lasted some six weeks when the gathering was made. It might be due to the extremely inclement and wet autumn and winter of 1918-19.—H. J. RIDDELSDELL. "Single specimens like this are difficult to name, but probably it would come under Fries' *juncea* (*sub-vulgaris*), but the spikes are shorter than usual. It may be the var. *angustifolia* (*sub-vulgaris*) of Blytt's *Norges Flora*, 1861, but I have not seen specimens; or *recta* of Asch. et Graeb."—BENNETT.

C. Goodenowii Gay, var. *juncea* Fr. Shores of Ullswater, v.-c. 69a, August 5, 1919. Very abundant all round the lake.—W. H. PEARSALL. " Fries placed his variety under *C. vulgaris* Fr. in *Mant.* iii., 154, 1842, but in his *Sum. Veg. Scand.* 250, 1846, he altered the name to var. *juncella*. It is the var. *uliginosa* of Syme's *Eng. Bot.* ed. 3, and in Boott's herbarium at Kew there is a specimen named '*C. aquatilis* Wg., var. *nardifolia* Wg. from Wahlenberg himself.' "—BENNETT.

C. salina Wahl., var. *kattegatensis* (Fries). By the Beauly River, Easterness, July 1919, where I discovered it in 1888. It is limited to a very small space and the summer drought was not helpful to its growth.—G. C. DRUCE. " Corresponds well with a specimen so labelled gathered at Beauly by Marshall in 1892."—BUCKNALL. " *Carex salina* is an aggregate species having under it 16 subspecies, varieties or forms. Our plant, which well agrees with Swedish examples, is subspecies *cuspidata* Wg., var. *kattegatensis* (Fr.) Almq. As a rule the Caithness specimens are larger than the Beauly ones. Alteration at the mouth of the Wick River, Caithness, has considerably reduced the large areas of *C. salina*: but there is plenty of it farther up the river, as far as Sibster—three miles."—BENNETT.

C. diversicolor Crantz, var. *aggregata* Rchb. Headington Wick, Oxon, July 18, 1893.—G. C. DRUCE. " Reichenbach, in the *Icones*

Fl. Germ. et Helv. viii., tab. cclxix, fig. 648, 1846, put this under *C. glauca*, of which it is a mere form—hardly even that. There are actually 30 names under *C. glauca* in Asch. et Graeb. *Syn. Fl. Mitt. Eur.* ! and in that work this is simply placed under the type."—BENNETT. " Surely a state only and not a true variety. Ascherson & Graebner mention this as *C. glauca, cladostachya*, but the rank they give it is not clear."—SALMON.

C. magellanica Lam. Abundant amongst *Sphagnum* in a deep bog on Mansergh Common, Westmoreland, v.-c. 69, June 27, 1919.—A. WILSON.

C. flava L., var. *lepidocarpa* Tausch. Caldecote Fen, W. Norfolk, v.-c. 28, July 7, 1919, coll. J. F. LUDDINGTON and J. E. LITTLE. " Yes, so I should name it."—SALMON.

C. flava L., var. *lepidocarpa* Tausch. Swamp in the clay pits, Newton Abbot, S. Devon, v.-c. 3, May 21, 1919.—C. WATERFALL. " Tausch describes his plant as having the stems *scabrid*. I do not think these are so, nor are the male spikes *long*. I think only a small form of *flava*."—BENNETT. " This is interesting. My specimens have the general habit of *C. Oederi*, var. *œdocarpa*, but many of the fruits have deflexed beaks, and moreover the nuts appear abortive. From this I suggest the plant may be *C. Oederi*, var. *œdocarpa* crossed with a member of the *flava* group."—SALMON.

C. fulva Host, sterile. Shingham Fen, W. Norfolk, v.-c. 28, July 15, 1919. Dr Druce has seen a sheet and suggests " *C. flava* aggr. × *fulva*, nearer *C. fulva*." In Caldecote Fen (two miles away) I found a little sterile *C. lepidocarpa* which Dr Druce thinks may be crossed with *fulva* though nearer *lepidocarpa*. Mr A. H. Evans, who has not seen the sheets, suggests that sterility may be due to the exceptionally dry season.—J. E. LITTLE. " Not *fulva* Host (=*Hornschuchiana* Hoppe) pure and simple, but I believe this interesting plant to be a hybrid between that species and *flava*, var. *lepidocarpa*. It seems entirely sterile and I should much like to know if *lepidocarpa* grew in the neighbourhood, as it seems to show evidences of that plant rather than any *Œderi* form. This particular hybrid is mentioned in Corbière's *Additions to Fl. Normandie* 112, 1895, under the name × *C. Chevalieri* Corb., having been found by Chevalier at Domfront, which is apparently a district where *flava* proper is not known to occur."—SALMON. " As the specimen sent seems quite sterile it cannot be *C. fulva* Host, which is fertile. Is it not *C. xanthocarpa* Degl. ?"—BENNETT. " We thought it *xanthocarpa*, certainly."—BUCKNALL & WHITE.

C. lasiocarpa Ehrh. Caldecote Fen, W. Norfolk, v.-c. 28, July 7, 1919, coll. J. F. LUDDINGTON and J. E. LITTLE.

Homalocenchrus oryzoides Poll. Amberley, Sussex, September 14, 1919.—A. WEBSTER.

Mibora verna Beauv. (*Chamagrostis minima* Borkh. *Knappia agrostidea* Sm.). Sandy ground near Llyn Coron, Anglesea, v.-c. 52, April 12, 1884, coll. THOS. ROGERS, ex herb. This tiny grass is so early in its appearance, flowering from February to April, that it is unlikely to have been gathered by many when in perfection. Indeed, a month or two later I have sought for it in vain, no trace of any kind remaining. I purchased the whole of the late Mr T. Rogers' collections in 1901, and finding these specimens I send them in hope that they may be acceptable. I may add that the Essex habitat for this plant has never been confirmed; the late Dr Knapp was supposed to have sown it in its one recorded Scotch habitat (Haddington) where, at all events, it is no longer to be found; and that Aberffraw with its immediate neighbourhood remains its sole locality in Great Britain proper. In the Channel Islands, however, it is not uncommon.—J. C. MELVILL.

Phleum asperum Jacq. Waste ground, Bradford, v.-c. 64, June 25, 1919. A few plants only of this rare grass made their appearance this year.—J. CRYER. " Yes, more correctly *P. paniculatum* Huds." DRUCE.

Agrostis alba, var. *coarctata* Hoffm. Marine Parade, Lowestoft, v.-c. 26, July 3, 1919.—F. ROBINSON. " I have not seen Hoffman's *coarctata* but I take this plant to be a reduced state of the *stolonifera* of Smith, *E.B.* 1532. A much better figure of this, however, very like the example now before me, may be seen in Martyn *Fl. Rustica*, iv., 120, 1795."—SALMON. " Is *A. alba* L., var. *condensata* Hack."—DRUCE.

A. verticillata Vill. [606]. Vale Parish, Guernsey, C., June 1913.—C. V. B. MARQUAND. " Yes, from the locality where I discovered it in 1906."—DRUCE.

Calamagrostis canescens Druce. Burgh St Margaret, Norfolk, June 25, 1919.—R. J. BURDON.

Ammophila baltica Link. Sand dunes, Hemsby, Norfolk, July 14, 1919.—R. J. BURDON. " See *Rep. B.E.C.* 384, 1915, and *Journ. Bot.* 192, 1919.—WHITE.

Aira præcox L., f. *prostrata*. [1409]. Coast sands, St Osyth, N. Essex, v.-c. 19, May 29, 1919. Possibly a "state" only. Three forms occur on the shore here:—(1) Perfectly erect with pale green stems and spikes, growing amongst Marram and other herbage. (2) Erect with purplish stems and greyish-green spikes, on open sand. (3) The quite prostrate form now sent which is confined to blown sand; a few examples have a supplementary panicle from the inflated upper sheath.—G. C. Brown. "This is f. *prostrata* of *Fl. Berks* 565, 1897."—Druce. "An unusual and pretty variation, possibly resulting from exposure. '—White.

Phragmites communis L. [377]. Marsh between Sidlesham and Pagham, W. Sussex, v.-c. 13, September 12, 1918. Growing on the drier ground at the edge of the marsh. Still further reduced forms appeared on the sandy banks near the sea and seem to agree with the description of var. *nigricans* Gren. & Godr. Is the latter more than a form?—W. C. Barton. "A small dry ground state, showing an approach to var. *nigricans*."—Bucknall & White. "*P. vulgaris* (Lam.) Druce, under var. *flavescens* Cust., but too dark a brown to be strictly that variety. The plant is probably from the end of a stolon as the panicle seems starved."—Druce.

Catabrosa aquatica Beauv. Damp ground, Great Henny, N. Essex, v.-c. 19, June 15, 1919. A scarce plant in N. Essex generally, but fairly plentiful in this part of the Stour valley and the adjoining meadows on the Suffolk side of the river.—G. C. Brown.

Briza media L., var. *palustris* (var. nova). Sutton Heath, Northants, June 15, 1916. Planta luxurians, caulis quam typo major, albidus; habitans paludes et loca aquatica, cum *Festuca rubra*, var. *barbata*.—A. R. Horwood. "The description does not amount to much; is the plant more than a state?"—Druce.

B. minor L. Oatfield near the Lizard, Cornwall, August 19, 1913. —J. W. White.

Poa glauca Vahl. Root from Caenlochan, Forfar: hort. Oxon, August 1919.—G. C. Druce.

P. nemoralis L., var. [Q. 341]. Caenlochan, Forfar, 1917: hort. Oxon, August 1919. This was named *Balfouri* by one of our critical botanists now alas no longer with us, but cultivation seems to prove it merely a pretty form of *nemoralis*.—G. C. Druce. "On some grasses of this group collected in the Highlands by the late Rev. E. S. Marshall it was remarked by Prof. Hackel (*Journ. Bot.* 71, 1897) 'that probably no clear line can be drawn between *P. Balfourii* and the alpine forms of *nemoralis*."—White.

P. pratensis L., forma. [1417]. Coast sands, S. Osyth, N. Essex, v.-c. 19, May 29, 1919. This has the habit of var. *subcaerulea* but is not glaucous. It looks quite different from the type when growing. Is it Parnell's var. *arenaria*?—G. C. Brown. "A condensed maritime state, most nearly approaching var. *subcærulea* Sm. We frequently find plants of *P. pratensis* that do not exactly correspond with any described variation."—Bucknall & White.

Glyceria maritima Wahl. [1463]. Sewage farm, Colchester, on mud dredged from the river Colne, v.-c. 19, July 16, 1919. Forming immense tufts; culms all prostrate, leaves flat; panicle very luxuriant, mostly exceeding the leaves.—G. C. Brown. "A sample of the gross, rank produce of a sewage farm."—White.

Eragrostis curvula Nees, teste Dr O. Stapf. Waste ground, Bradford, v.-c. 61, September 4, 1919. More abundant this year than last when only a few plants appeared.—J. Cryer. "Referred to the S. African *E. chloromelas* by Dr Thellung."—Druce.

Festuca membranacea (L.) Druce. Coast sands, St Osyth, N. Essex, v.-c. 19, May 29, 1919.—G. C. Brown. Also from Clymping Sands, Littlehampton, W. Sussex, June 8, 1918. It had been observed there previously for it is recorded in Arnold's *Fl. Sussex* as *F. uniglumis* Soland.—R. J. Burdon.

F. ovina L. [378]. Arthog, Merioneth, v.-c. 48, June 14, 1915. Each cover contains two forms which grew together on ant-hills under identical conditions; of these one has the glumes almost glabrous, the other distinctly hairy.—W. C. Barton. "The form with hairy glumes should be compared with the plant I sent from Coniston, 1913 (see *Report* 512, 1913) named by Hackel subvar. *hirtula* Hack. In the Coniston plant the hairs on the glumes are finer and more appressed than in Mr Barton's. His plant, in my example, is also shorter and more caespitose with shorter leaves than the Coniston ones, and could hardly go under var. *capillata*."—Travis.

F. ovina L., var? Inchnadamph, W. Sutherland, July 1919.—G. C. Druce.

F. tenuifolia Sm. = *ovina* L., var. Sandy ground in shade, Milford-on-Sea, S. Hants, June 1919. These specimens agree with authenticated examples in my herbarium from S. Europe, collected by Bourgeau and others; no doubt near *capillata* Hackel which occurs not far off, also at Milford, but differing in its larger growth and more extended panicle.—J. C. Melvill. "Yes, a shade grown plant and not characteristic. The authority for *tenuifolia* as a species is not Smith but Sibthorp; as a variety *paludosa* seems the oldest combination, but it appears well deserving of specific rank. It is the plant of acid soils, whereas *vulgaris* is the basic soil plant."—Druce.

F. rubra L., var. *vulgaris* Gaud., subvar. *grandiflora* Hackel. [1416]. Coast sands, St Osyth, N. Essex, v.-c. 19, May 29, 1919.—G. C. Brown. "The spikelets are not large enough. I should leave it under *F. rubra*."—Druce.

F. rubra L., var.? Sandhills between Aberdovey and Towyn, Merioneth, N. Wales, May 25, 1919.—J. C. Melvill. "This, too, I should leave under type."—Druce.

F. rubra L., var. *barbata* Hackel. Sutton Heath, Northants, June 15, 1916.—A. R. Horwood. "Yes, this may pass as Hackel's sub-variety."—Druce.

F. sylvatica Vill., var. *decidua* Sm. Woodland stream-side, Lowwood, Westmoreland, v.-c. 69, August 9, 1919. Whole plant smaller and leaves narrower than with the type.—S. H. Bickham. "This agrees with var. *decidua* and the locality is right."—Bucknall & White.

Bromus madritensis L., var. *rigidus* Bab. = *B. rigidus* Roth. St Sampson's, Guernsey, June 10, 1919.—C. V. B. Marquand. "I have seen this grass on several occasions in the Channel Islands and am persuaded that it is specifically distinct from *B. madritensis* which grows so abundantly here at Bristol. They are well separated in Druce's *List*."—White.

B. secalinus L. Field at Blaenwann, near Whitland, Carmarthenshire, August 1, 1919.—C. V. B. Marquand. "Yes, the var. *velutinus* Schrad."—Druce.

Hordeum jubatum L. Waste ground, Bradford, Yorks, July 24, 1919. Many very large tufts.—John Cryer. "We cannot agree to the name, but the plant is unknown to us."—Bucknall & White. "Close examination showed me this was not the American *jubatum*, and at first I was inclined to refer it to *H. violaceum*. It would not fit that, however; and Dr Thellung has identified it with *H. comosum* Presl. New to our List."—Druce.

Cryptogramme crispa Br. Rocky ground above Dale Beck, near Melmerby, Cumberland, July 28, 1919.—C. Waterfall. And from Glyder Fawr, 1800 ft., N. Wales, July 10, 1919.—C. V. B. Marquand.

Asplenium lanceolatum Huds. Rock crevices, above Black Head, S. Devon, May 9, 1919.—C. Waterfall.

A. viride Huds. Limestone rock, Hesleden Ghyll, W. Yorks, May 21, 1918.—C. WATERFALL. "For want of a little care in pressing these good ferns their value as specimens has been lost."—WHITE.

Lastraea Thelypteris Bory. Wicken Fen, Cambs, v.-c. 29, June 13, 1919.—C. V. B. MARQUAND.

Equisetum palustre L., var. *ramulosum* Milde. Walton Moor, Clevedon, N. Somerset, v.-c. 6, May 29, 1919. Stem with 8-10 furrows.—IDA M. ROPER.

Isoetes lacustris L. Floating on Llyn Gwynant, Carnarvonshire, v.-c. 49, August 5, 1918.—C. WATERFALL.

Chara fragilis Desv. [1107]. Shallow pits, Aldham, W. Suffolk, v.-c. 26, May 22, 1919.—G. C. BROWN. "Is *C. vulgaris*."—GROVES.

C. hispida L. Peaty ditch, Clapton Moor, N. Somerset, September 28, 1903.—J. W. WHITE.

CORRECTIONS IN DISTRIBUTORS' REPORTS FOR 1912 *AND* 1913, *AND SECRETARY'S REPORT FOR* 1916.

"With reference to '*Euphrasia curta* Wettst. (*fide* E. S. Marshall), heathy and grassy pasture, 90 ft. elevation, Black Crag, Stromness, Mainland, Orkney, August 19, 1912, H. H. Johnston,' *Rep. B.E.C.* 273, 1912, I gathered fresh specimens in fl. and fr. from the same station on August 4, 1919, and September 5, 1919, respectively, and forwarded them to Mr C. Bucknall, who reports *in litt.* October 18, 1919, as follows:—'*E. latifolia* Pursh. These specimens agree with Wettstein's description in bearing a few stipitate glands on the leaves and bracts. Having been gathered rather late in the season they lack the large stem leaves with broad, obtuse terminal lobe which is so characteristic of *E. latifolia*, and being glandular they might easily be taken for *E. occidentalis*. This actually happened to a sheet of specimens from the same locality in *Herb. Druce*, gathered in 1912, which were variously named *E. curta*, *E. borealis*, and *E. occidentalis*. I have no doubt that these were the same as the present (1919) gatherings, and I have no hesitation in naming them *E. latifolia*.' This identification confirms Mr Marshall's record of *E. latifolia* from the Black Crag, in 1900; *Journ. Bot.* xxxix., p. 270; and therefore it cancels the following, viz.:—(1) *E. curta* Wettst. in *Rep. B.E.C.* 273, 1912; (2) *E. borealis* Towns. in *Rep. B.E.C.* 1913; *Trans. Bot. Soc. Edin.* vol. xxvi., 213, 1914, and *Fl. Orcadensis* by Magnus Spence, 133, 1914; and (3) *E. occidentalis* Wettst. in *B.E.C. Secretary's Report*, 497, 1916." H. H. JOHNSTON.

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